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Presidential Address
ON
THE GROWTH AND DEVELOPMENT OF THE OXFORD MEDICAL SCHOOL.

Delivered at the Seventy-second Annual Meeting of the British Medical Association held at Oxford on July 26th, 1904.

By WILLIAM COLLIER, M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD; LITCHFIELD LECTURER IN MEDICINE AT THE UNIVERSITY OF OXFORD; AND PRESIDENT OF THE ASSOCIATION.

[Dr. Collier commenced his address by reviewing the causes which led at the early part of the nineteenth century to the neglect of medicine at the Universities of Oxford and Cambridge, and particularising the steps which were taken towards the re-establishment of medicine at the former seat of learning. He proceeded :—]

In November, 1882, Professor John S. Burdon Sanderson was appointed to the newly founded chair of human physiology and histology at Oxford, a first step towards the promotion of medical education in Oxford on modern lines. Having elected a professor of physiology, it was found necessary to build him laboratories and class-rooms for the purpose of teaching, and on June 5th, 1883, the members of Convocation were asked to grant a sum of £10,000 for this purpose. The resolution met with keen opposition, partly on the ground that vivisection would be practised and partly on the ground that the expenses were beyond the existing resources of the University. The resolution was carried by the small majority of three votes. On Feb. 5th, 1884, a decree was submitted to Convocation to empower the curators of the University Chest to raise a sum not exceeding £10,000 to defray the cost of the erection of a laboratory and class-rooms for the professor of physiology. A circular had been sent round to those believed to be opposed to vivisection, and only to those, calling upon them to show by their votes their determination not to permit experimental researches in Oxford. There spoke in favour of the resolution Dr. Liddell, the then Dean of Christ Church, and the late Sir Henry Acland, and against it the late Professor Freeman and the present Bodleian Librarian ; placets, 188 ; non-placets, 149 ; and so the decree was carried. Having built the laboratories and lecture-rooms for the professor of physiology, it was found necessary to ask for an annual sum of £500 for three years to defray the cost of heating, lighting, water-supply, the salary of a demonstrator of histology, and other incidental expenses. The question of vivisection was mooted but a majority of 168 in a house of 656 decided against "the anti-physiological party," as they were called. In the same year, 1885, the Faculty of Medicine, which had been merged in natural science, was recreated, and Mr. Arthur Thomson, senior demonstrator in anatomy in the University of Edinburgh, was elected lecturer in anatomy. It needed a man of resolution and fixed purpose to cope with the situation, for when he took up his work in Oxford Mr. Thomson found himself with three students and a small wooden shed in which to teach anatomy—a great contrast to his Edinburgh experience. A sum of money was immediately collected by members of the University interested in the development of the school and a small temporary lecture room and a dissecting room were built. In the following year the curators of the University Chest built, at a cost of £500, a temporary iron-roofed building with rather more accommodation. By 1891 the lecturer's class had grown from three to 67. A sum of £7000 was now asked and obtained from the University to provide a permanent home for the teaching of human anatomy and the present excellent building, in which the Section of Anatomy will be held, was built. In a year or two, largely owing to the success of Mr. Thomson as a teacher, the lectureship was converted into a professorship.

In 1886 a most important statute was passed by which students in natural science were exempted from the first public examination in classics known as Moderations. This measure enabled students of medicine after passing their preliminary examination known as Responsions, which might be passed before coming into residence, to devote their first year in Oxford to the study of the preliminary subjects in natural science, and so another and most important barrier to the establishment of a medical school disappeared.

In 1891 Sir Henry Acland, who had always interested himself in the study of pathology and bacteriology, inaugurated a new department in bacteriology and appointed, first, Dr. Menge of Munich to take charge of it and later, in turn, Dr. Bertram Hunt and Dr. J. Ritchie. In 1895 Sir Henry Acland retired from the Regius professorship and Sir John Burdon Sanderson was appointed to succeed him, Professor F. Gotch, professor of physiology in the University of Liverpool and formerly lecturer in physiology at this University, taking Sir John Burdon Sanderson's chair. In 1896 the new Regius professor, in an open letter to the President of Magdalen, pointed out that the time had come when Oxford medical students should have the advantage of two new departments —pathology and pharmacology—both well within the scope to which Oxford had restricted itself in the building up of the medical school, and in the following year William John Smith Jerome was appointed lecturer in pharmacology and materia medica.

In May, 1898, in spite of the impoverished condition of the University Chest, Convocation passed without dissent a decree empowering the University to spend £7500 in erecting new laboratories and lecture rooms for the joint use of the professors of botany and comparative anatomy, Sir William Anson showing that this expenditure was rendered necessary by the increase in the number of medical students. In 1899 a generous medical student, Mr. Ewan R. Frazer, offered the University a sum of £5000 towards the expenses of building a pathological laboratory. This sum was accepted, the University at the same time agreeing to supplement it with another £5000, and to make an annual grant of £250 for upkeep. Two years later, in October, 1901, the new pathological laboratory was opened, and at the opening ceremony Dr. Ritchie, reader in pathology, pointed out that, in addition to giving those who were seeking degrees the opportunities of acquiring the necessary knowledge in pathology, it was the desire of the University to provide opportunities for those who wished after graduation to return to Oxford to prosecute researches in pathology and bacteriology, and to this end there had been provided a special room for experimental pathology. In view of the fact that much of the pathological work of the future must be in the direction of the chemical examination of the products of disease processes, a chemical research laboratory had also been provided.

Already the importance of our new pathological laboratory has been recognised, as a generous donor, Mr. Philip F. Walker, has quite recently endowed a studentship of the annual value of £200, the holder of which must devote himself to original research in pathology. Who can doubt that this studentship will result in the production of much good work, as we all know that many a man eagerly anxious and in every way fitted to carry on investigations of the utmost importance to mankind is prevented from doing so by want of means.

I must not omit to mention that in 1901 the Drapers' Company presented to the University the magnificent medical library which you will find in close proximity to the museum buildings and which will ever remain as a memento of their generosity. In 1902 Mrs. Ogilvie gave to the University a sum of £7000 for the purpose of creating a readership in ophthalmology, to be held by the senior surgeon to the Oxford Eye Hospital, and this readership is now held by the president of the section of ophthalmology, Mr. R. W. Doyne, to whose untiring efforts for many years past we largely owe the excellent eye hospital which now exists in this city.

THE PRESENT STATE OF THE OXFORD MEDICAL SCHOOL.

You are now in a position to judge to what extent the desires expressed by the British Medical Association in 1879 have been fulfilled. It asked that at least human anatomy, physiology and general pathology, and materia medica might be properly taught. You will find that for many years past adequate provision and suitable accommodation and apparatus have been provided for the teaching of these subjects and that at the present moment they are being taught by professors, readers, and lecturers whose ability and fitness for their important duties cannot be questioned. The Association desired that provision should be made for the elementary teaching of clinical medicine and surgery. In 1883

the existing Litchfield clinical professorship was split up into a Litchfield clinical lectureship in medicine and one in surgery and from that date to the present students are taught in the wards of the Radcliffe Infirmary the bare outlines of clinical diagnosis in medicine and surgery and are thus fitted to take immediate advantage of the most advanced teaching and the excellent clinical material they find awaiting them at the large metropolitan hospitals. Yet it would appear from the questions so often asked that little is known by the general public of these important changes which have been carried out here during the past quarter of a century. Less than six years ago a member of our Association, living not much more than 50 miles from this city, was reported to have used these words in an address he was giving at the opening of a medical school in the West of England, "Oxford still misapplies its medical endowments and declines to reorganise its medical faculty." And again, in the same address, "You must go to either Oxford or Cambridge, where the demon of athletics reigns supreme and where professional studies are depreciated if not despised." Had he taken the trouble to inquire he would not have so glaringly displayed his ignorance, for he would have found that medical students at Oxford and Cambridge were as keen and as steady workers as any in the country and that every possible facility and encouragement was being given them for the proper carrying on of their work. A further study of a list of prizes gained and important professional posts held during the last few years by past Oxford and Cambridge students would have proved to him that the time spent at these Universities was not wasted.

[Here Dr. Collier enumerated the makers of the Oxford revival as a medical centre, dwelling at some length on the parts played by Acland, Buckland, Charles Daubeny (professor of chemistry and botany), P. B. Duncan (keeper of the Ashmolean Museum), Robert Walker (reader in experimental philosophy), the fourteenth Earl of Derby (chancellor), Burdon Sanderson, Gotch, and Thomson, and such leading figures in general educational development as the late Dean Liddell and the late Dr. Jowett. He continued:—]

THE INFLUENCE OF THE SCHOOL.

Now let us ask ourselves whether the advantages claimed more than a quarter of a century ago as likely to accrue by associating the Universities of Oxford and Cambridge with medical teaching have in any way been achieved. For some years ago a considerable number of medical graduates have been passing forth into the larger world after spending three or more of the most impressionable years of their lives at one or other of the two Universities. Have they benefited? I cannot for one moment doubt that the majority of these graduates if appealed to would declare with no uncertain voice that they recognised fully that their mixing with men of their own age, who were taking up other subjects for their life-work and interesting themselves in other mental pursuits, had done much to widen their own general culture and to develop in them interests outside their own professional work. Has the University benefited? I think so. The establishment of the medical school on a modern basis has introduced into the University a body of students starting their university career with a definite object in view and compelled by the very nature of the case to lead a steady, strenuous life, for no student can hope to pass his professional examinations without a due amount of steady work. But to my mind the greatest advantage to be noted has been the influence the university student has had on the other medical students of our great metropolitan schools. All of us are familar with the Bob Sawyer type of medical student as depicted by Charles Dickens—that is to say, we are familiar with him in fiction—but I rather fancy as a living type he has for many years ceased to exist. Many of us can remember the time when any more than usually disgraceful outbreak of rowdyism in London was invariably attributed, rightly or wrongly, to medical students. But this is a matter of the past. The medical student of a quarter of a century ago undoubtedly bore a very bad character in the eyes of the public; he no longer does so. Why the change? I should attribute it, I believe with truth, largely to the influence of the university graduates who have come among them. These university graduates are older men and have long passed their first experience of freedom from school discipline; have more settled purpose in life, have a clearer and better idea of what is so difficult to define but so easy to recognise—good and bad form. It is these older students who, in recent years, have largely dominated the standard of life at our London schools, and their influence has been all for good. Lastly, let me point out that if the standard of general culture is distinctly raised by all the advantages of a university education, as we believe it is, then as the numbers of those participating in this education are increased the status of the medical profession is certain to be raised. There are some, I know, who do not wish to see a large medical school at Oxford. They argue that the standard should be a high one and only men of quite exceptional ability should be encouraged to seek the Oxford D.M. degree. Surely this is a somewhat selfish and exclusive policy. Everyone would agree that the standard should be high. Some, and I trust most of us, would wish that it should not be too high for the man of average ability with the capacity for work well developed. To such men every encouragement should be given to participate in all the advantages to be gained by a few years' experience of university life.

EARLIER BENEFACTORS.

I pass now from Oxford of to-day to Oxford of the past and will recall the names of a few of our greatest men, members of our own profession, who have been associated with the University.

I first mention Linacre, who at the age of 24, in 1484, was elected a Fellow of All Souls and was incorporated a D.M. of the University on his Padua degree. While at Oxford he seems to have devoted most of his time to giving lectures in physic and to the teaching of Greek. Not only was he a profound scholar and a successful physician, but he was also a member of the clerical profession—indeed, the last few years of his life were entirely devoted to clerical work. His wealth was very largely acquired by his numerous ecclesiastical preferments. He bequeathed considerable sums of money to both Oxford and Cambridge for the purpose of encouraging the teachers of medicine, but, unfortunately, owing to the imprudent management by his trustees a good deal of this money was lost. We still have the Linacre Professorship of Comparative Anatomy to remind us of one of our oldest and most distinguished benefactors. It was mainly due to Linacre's efforts that the Royal College of Physicians of London was founded in 1518, he being elected the first President. It was probably due to his influence, too, that a statute was passed in Henry VIII.'s reign that no person should practise as a physician or surgeon unless examined and approved by the bishop of the diocese in which he lived, who was to call to his assistance expert persons in the Faculty. This privilege of the bishops' continued for a very long period.

For some years Harvey, the discoverer of the circulation of the blood, dwelt at Oxford, where he worked at anatomy and made many dissections. He was incorporated a D.M. of the University and in 1645 by royal mandate was made Warden of Merton College but did not retain the post long, as the following year, after the surrender of the city to the Parliamentarians, he returned to London. It was while Harvey was at Oxford that another great anatomist who studied under Harvey was preparing himself for future fame—Thomas Willis, well known to all of us by his description of the anatomy of the brain and more particularly by the circle of Willis. Willis was born of Oxfordshire parents within a few miles of our city and for many years practised his profession in a house opposite Merton College. Associated with Willis was Christopher Wren, the architect of St. Paul's Cathedral. Born in 1632, Wren left school at the age of 14, and was engaged by Sir Charles Scarburgh to act as his assistant and demonstrator at his lectures on anatomy at Surgeons' Hall, London. Three years later, at the age of 17, he was entered as a fellow-commoner at Wadham, at 21 was made a fellow of All Souls, and at 28 Savilian Professor of Astronomy. It was while at All Souls that he made elaborate drawings to illustrate Dr. Willis's work on the anatomy of the brain. In 1679 he made experiments which led him to the invention of a method for the transfusion of blood from one animal to another. It was at the age of about 30 he began to follow the profession of architecture and one of his first works was this Sheldonian Theatre, the first stone of which was laid in 1664 and completed five years later. At the age of nine he was capable of writing an elegant Latin letter to his father but it was science and mathematics that attracted him. A splendid mathematician, a great experimentalist, always working out the most difficult scientific problems, a distinguished

astronomer, and a famous architect all combined in one: no wonder that Barrow described him as a boy a prodigy, as a man a miracle, nay, even something superhuman. He died aged 91 years. It was about this period that the Royal Society sprang into existence, largely, as is asserted, by the influence and coöperation of Oxford men. About 1648 Willis, Seth Ward, Robert Boyle, and other members of the University distinguished in theology and science were accustomed to meet in the rooms of Dr. Wilkins, the warden of Wadham, for the purposes of discussion. Ten years later the majority of them had left Oxford and taken up residence in London where they organised the Royal Society in 1662.

I now mention our greatest benefactor, John Radcliffe, who was born in 1650 and died in 1714. At the age of 15 years he became an undergraduate of University College, ten years later he took his B.M. degree and his D.M. at the age of 32 years. For nine years he practised as a physician in Oxford and we are told that he incurred the anger of the older practitioners in the town because he paid so little regard to professional conventionalities. In 1684 he moved to London and his apothecary tells us that he had scarcely been in town a year before he was earning more than 20 guineas a day. His lively conversation, it was said, soon made him the most popular physician in London. We are told that he succeeded more by his ready wit than his learning, for while at Oxford his library consisted of some phials, a skeleton, and a herbal. In 1692 he lost some £5000 owing to the capture by the French of a ship in which he was interested. When his friends condoled with him he replied that it did not matter, for he had only to go up 250 pairs of stairs to make himself whole again. If this be true the physicians' fees in those days would seem to have been very much higher than at present. At any rate, we can admire his philosophical way of putting up with a financial loss—a little more work will put me right again. If it be true that his witty tongue helped him to succeed in his profession it is also certain that it lost him many influential patients. Early in his London career he gave great offence to the Princess Anne by neglecting to visit her when sent for and by saying that her illness was nothing but the vapours. I suppose in these days we should give the disorder a longer and more classical name. Later he greatly offended King William III. by telling His Majesty, after inspecting the King's swollen ankles, that he would not have the King's two legs for his three kingdoms, a remark so free that the King never saw him again. A few months before his own death he fell into great disgrace because when summoned to attend Queen Anne in her last illness he delayed his visit and was said to have replied that as he understood Her Majesty's case was desperate it would be best to let Her Majesty die as easily as possible. This sounds rather brutal but it was said in reference to the Queen's well-known great antipathy to him and Radcliffe urged that he feared his presence would do more harm than good. In 1695 the King offered him a baronetcy which was declined. We are told that though rough in manner and fond of flattery he was generous to those in need, a good friend, and a munificent patron of learning. He died in 1714 and lies buried in St. Mary's, our University church. Although he was given an almost royal funeral by the University which benefited so greatly by his bequests his grave was left more than 100 years unknown and unnoticed. In 1819, during some alteration in the church, on disturbing the pavement his coffin was discovered, not even a slab marking the spot where he was buried. A simple engraved slab now marks the spot near the north entrance. During his life he gave largely to his old college and to several charities and at his death he left by will his Yorkshire estate to the Masters and Fellows of University College for ever, to be held in trust for the founding of two Radcliffe travelling Fellowships, the overplus being paid for the purpose of buying perpetual advowsons for the college. In addition he left £5000 for the enlargement of the college and £40,000 for the building of a medical library. With money derived from his estates two other buildings were erected in this city by his trustees, the Radcliffe Infirmary and the Radcliffe Astronomical Observatory, and money was further granted towards the building of the Royal College of Physicians in London.

The Radcliffe Library in Radcliffe-square, completed in 1747, is one of the most conspicuous buildings in this city and doubtless will be visited by all of you. It was in this building that your first meeting at Oxford was held in 1835, on your third anniversary. In it you will find a very pleasing portrait of Radcliffe painted by his friend, the King's painter Kneller. I cannot refrain from recording a passage of wit between these good friends. They lived in adjoining houses and for the sake of convenience Kneller had allowed Radcliffe to make a doorway in his garden wall; in course of time this doorway became a source of great annoyance to Kneller, as Radcliffe's servant frequently used it to gain entrance to his garden and to pick the flowers. At last, in a fit of anger, Kneller wrote to Radcliffe, and told him that if he could not control his servants he should be obliged to take the door away and to brick the aperture up. Radcliffe at once sent his servant to Kneller to tell him that he might do what he pleased with the door so long as he did not paint it. Kneller having received the message was equal to the occasion and at once replied, "Go tell Dr. Radcliffe with my services to him that I can take anything from him but physic." Fortunately for Oxford Radcliffe was not happy in his love affairs, for we are told that after passing many years for a misogynist, the result of an early disappointment, he again in his old age fell in love with the daughter of a wealthy citizen, but the match was eventually broken off—a very short time before the appointed wedding day; had it not been we might well have lost our library, our infirmary, and our observatory.

Thomas Sydenham (1624–89), who has always been regarded as one of the chief masters of English medicine, was also connected with the University. His career at Oxford was certainly a chequered one. At the age of 18 years he entered as a fellow commoner at Magdalen; a few months later he joined the Parliamentary forces and fought against the Royalists; four years later, in 1646, when Oxford and the other royal garrisons surrendered, he resigned his commission and was on his way to Oxford when he chanced to meet with Dr. Thomas Coxe who was attending his brother and who persuaded him to take up medicine. He then joined Wadham College and the following year was elected to a fellowship at All Souls. In 1648 he obtained his degree of B.M. in a very irregular manner as he was created B.M. by command of the then Chancellor of the University without having taken a degree in Arts and with little knowledge of medicine. For a time he studied at Oxford under the Regius professor of medicine, whose lectures, we are told, consisted merely in reading the ancient medical classics. Again he joined the army and became a captain of a troop of Parliamentary Horse. On one occasion he was left on the field of battle among the dead and lost, as he tells us, a great deal of blood. On another occasion he nearly lost his life at the hands of a drunken soldier who broke into his bedroom at night and discharged a pistol at his breast. Fortunately the soldier's left hand was interposed and was shattered by the bullet, while Sydenham escaped unhurt. Having again retired from the army he studied medicine at Montpellier and a year or two later began practice in London. In 1676, at the age of 52 years, he incorporated as M.B. at Pembroke College, Cambridge, on his Oxford degree and immediately took the M.D. of that University. It is supposed that there were political reasons for his not taking the Oxford degree. By his methods of studying disease and by his masterly description of diseases Sydenham is admitted to have made an epoch in medical science. In 1894 a life-sized statue of Sydenham was presented to the University museum by Sir Henry Acland and others.

Time will not permit me to mention others who attained the highest positions in the medical world. I can only draw your attention to the fact that during the first century of the existence of our Royal College of Physicians, of the 34 presidents whose names are recorded, 21 were graduates of the University of Oxford. There are, however, one or two other benefactors whose names I must mention, such as Dr. Mathew Lee of Christ Church, who, after practising some years in Oxford, went to London, became a Fellow of the College and in turn Censor and Harveian Orator; was for some years physician to Frederick Prince of Wales and died in 1755. He bequeathed a sum of money to be held in trust by the Dean and Chapter of Christ Church for the purpose of paying a reader in chemistry and one in anatomy. Lord Litchfield, by his will dated 1772, left money for the foundation of a professorship of clinical medicine in association with the Radcliffe Infirmary. He stipulated that the professor was to be elected by Convocation, that he was to visit his patients daily from November to March, and was to read a lecture two days a week; and, further, he provided that if the professor neglected his attendance he was to forfeit a year's stipend to the infirmary and to pay £5 to

that institution for each lecture omitted. I am much afraid that this most wise stipulation was never really enforced. In 1883 this professorship was converted into a lectureship in medicine and in surgery. Dr. George Aldrich, by his will dated 1803, left a sum of money for the endowment of a professorship of the practice of medicine, which professorship goes to increase the very inadequate stipend of the Regius professorship.

[Dr. Collier then briefly pointed out that the future efficiency of the Oxford Medical School was largely dependent upon the generosity of the public, who should provide proper endowments for the older universities, and concluded by reviewing—]

THE PREVIOUS MEETINGS OF THE ASSOCIATION IN OXFORD.

The British Medical Association was founded at Worcester in 1832, chiefly by the energy of Mr. (afterwards Sir Charles) Hastings. At the first meeting Dr. Kidd, the Regius professor of this University, was present and was elected a member of the first Council. Three years later the Association held its first meeting at Oxford under the presidency of Dr. Kidd; the Council met the day before and arranged all the details of the meeting, which was attended by 300 members. The chief meeting was held in the Radcliffe Camera, the dome-shaped building to which I have alluded, and one or two incidents connected with this meeting are worth recalling. The address in medicine was delivered by Dr. Pritchard and the University conferred on him the degree of M.D. Although this same Dr. Pritchard had studied in Oxford he had been unable to take his degree because he was a Dissenter. The conferment of the degree in this way was taken at the time as a proof that a more liberal spirit was beginning to exist in the University. The Regius professor pointed out that such a degree could not be procured by any ordinary medical student with less than 11 years' classical servitude and application—mark the words, classical servitude, as they imply that even in those days some students did not take kindly to the classics. The chief attraction of the meeting was the public performance of lithotrity by Mr. Costello before a very crowded audience in the town hall, the school of anatomy not being sufficiently large for the spectators. You will notice that at that time a dissecting room seems not to have been thought an unsuitable place for a surgical operation. It was remarked at the time that not a single Oxford graduate in medicine attended to support the Regius professor of medicine.

The second meeting of the Association at Oxford, which now numbered 1630 members, was held in July, 1852. Dr. Ogle, the Regius professor, was the President, and the meetings, which extended over two days, were held in the House of Convocation. On this occasion the honorary degree of D.C.L. was conferred on three members—Sir Charles Hastings (the founder), Dr. John Forbes of London, and Dr. John Conolly of Hanwell. In the evening of the first day the Association was entertained in the Radcliffe Camera by Dr. Acland.

Another 16 years passed and in 1868 the Association visited Oxford for a third time. It had now grown to a total membership of 3672, of which some 500 attended the meeting. Dr. Acland, the Regius professor, presided, the general meetings being held in the Hall of Christ Church, while the sectional meetings, of which there were five, were held in the University Museum. Among the sectional secretaries on that occasion I find the name of W. S. Church, M.A., B.M., now President of the Royal College of Physicians of London, who gives the Address in Medicine to-morrow evening. I am glad to add that the three local secretaries, Dr. E. B. Gray, Dr. H. M. Tuckwell, and Mr. Edward Chapman, now a Member of Parliament, are all living. The honorary degree of D.C.L. was conferred on the following members: Sir Charles Locock, the Rev. Samuel Haughton, M.D., Dr. W. Gull, Mr. James Paget, Mr. John Simon, and Mr. James Syme.

To-day our Association numbers over 19,000 members and we are expecting more than three times the number who visited Oxford in 1868. More than this—and it is, I think, a matter for hearty congratulation—the influence of our Association has grown world-wide, for since 1868 branches have been formed throughout India and in nearly all of our colonies. This truly remarkable growth of our Association in magnitude, power, and influence has been due to the fostering care and unremitting labour of many workers. Into our hands they have intrusted a great inheritance and it will be our duty to see that no negligence or unwise and ill-considered action on our part tends in any way to jeopardise its further growth and development and power for usefulness.

Address in Medicine

ON

OUR SANITARY NEEDS, WITH SPECIAL REFERENCE TO THE NATIONAL HEALTH.

Delivered at the Annual Meeting of the British Medical Association at Oxford, on July 27th, 1904,

BY SIR WILLIAM SELBY CHURCH, BART., K.C.B., M.D. OXON.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN.—I feel very deeply the honour which your Council has conferred on me in requesting me to give the Address in Medicine at this meeting of the Association and feel still more deeply the difficulty of the task—a difficulty which arises not only from my own incompetency but also from the vastness and complexity of the subject.

MEDICINE IN 1868.

Medicine having for its object the mental and bodily health of mankind is closely interconnected with the varying circumstances that bear on the conditions under which we live. The prosperity of the nation, the conditions under which the labours of the population are carried on, the state of commerce and of the arts and sciences, all react on the health of the people and nothing which concerns the life of the nation is foreign to the subject. Every advancement in science and its application to the arts has a bearing on medicine. To pure science it is directly indebted for means by which the various organs of the body can be examined, the presence of disease demonstrated, the changes in our bodies accompanying disordered health recognised, and perhaps more important than all, the exact methods of science point out the way in which the more complex questions presented in living bodies should be studied. It would occupy too much time, even if I were competent for the task, to trace a portion of the benefits which the exact sciences have conferred on clinical medicine during the years that have passed since the Association last met in this university city, a meeting at which addresses which still stand out as memorable among the numbers which have been given on similar occasions were delivered by Acland, Rolleston, and Gull, who will for many years yet to come be remembered not only as ornaments of our profession but as having done much to promote medical and scientific knowledge—leaders to whom we can still look for guidance for the manner in which the different subjects they dealt with should be approached.

The meeting of the Association in 1868 is for another reason of unusual interest, for it may be taken as marking the date of the parting of the ways. Up to that period our conceptions of the causes of morbid changes in the body had not undergone any great modification from the views held by the originators of pathology—Morgagni, Hunter, Baillie, Carswell, and others. Our knowledge of the infective processes leading to inflammation and suppuration may be said to have been at that time non-existent. The symptoms and course of the specific fevers as well as the circumstances in which they occur had been thoroughly recognised and worked out but we were still ignorant of the true nature of the specific poisons on which they depended. Medicine remained open to the taunt to which Bacon 200 years before had given utterance: "That it had rather professed than laboured and yet more laboured than advanced, as the pain bestowed thereon was rather circular than progressive, for I find great repetition and but little new matter in the writers on physic."[1]

It was in the year preceding the Oxford meeting that

[1] Novum Organum, book iv., chapter ii.

Lister read at Dublin his paper on the Antiseptic Principle in the Practice of Surgery,[2] founded on the results of his treatment of compound fractures, abscesses, and wounds[3] during the preceding three years. It was at this time also that the infectivity of tuberculous matter began generally to be recognised; 20 years before Klencke[4] had produced tuberculosis of the lungs and liver in rabbits by inoculation with human tubercle, but he did not pursue his investigations and his experiments attracted little notice, and it was not until Villemin's work in 1861[5] and the account of his numerous and careful experiments published in 1868,[6] that attention was again drawn to the subject. Villemin's work was carried on by Sir J. Burdon Sanderson,[7] late Regius professor of medicine in this University, who explored and demonstrated the channels by which the tuberculous process is disseminated within the organism, yet many years had to elapse before Koch in 1882 demonstrated that the presence of the tubercle bacillus in all tuberculous degenerations was the essential element.

THE GROWTH OF BACTERIOLOGY.

I have thought it desirable to remind you thus very briefly of the position in which medical knowledge stood in 1868 before drawing your attention to some of the remarks made by Sir William Gull in his address on Clinical Observation in Relation to Medicine in Modern Times, which he treated with the breadth of view and felicity of generalisation which was characteristic of his mind and teaching. It was the adaptation of Pasteur's work and discoveries to medicine and Koch's demonstration of the bacillus of tubercle in 1882 which led to the revolution which has taken place in our conceptions of the nature and cause of many forms of disease. Whilst I have no intention of attempting to review the changes that the last 35 years have witnessed it may be nevertheless instructive, as well as interesting, to turn to some of the passages in Sir William Gull's address and mark how great is the gulf which separates the medicine of the present day from that of our immediate predecessors. In speaking of fevers Sir William Gull[8] said: "In the consideration of these small-pox stands first, since through vaccination we have clearly demonstrated at least for one form of fever—and it seems but fair to infer the same for others—that recovery and subsequent immunity are produced by a process of impregnation and assimilation and not, as is still maintained by some, of elimination"; whilst rejecting the theory of zymosis, by which he says "we are carried back to the days of ignorance when concoction and maturation were made to explain whatever was obscure," he suggests that "what really constitutes the specific character of each fever is the attendant tissue change which, when completed according to the special poison, is followed by convalescence"—although I think it is pretty clear that he contemplated by tissue changes an alteration in the solid tissues of the body, his words do not inaptly apply to the changes which we believe are undergone by the blood. In his Harveian oration delivered two years later he again refers to the subject of infectious diseases, saying: "that they spread by emanations from the sick must have been long known and that such emanations are of a solid nature we may infer from the fact that they may be dried and conveyed from place to place, but in what state, whether as amorphous material or as germs, we know no more to-day than was known a thousand years ago."[9]

How different is the position now. Already we are acquainted with the specific organisms which are the *causa causans* of many of the febrile diseases and can safely assume that the others in which we have not yet discovered the micro-organisms are due to similar agency. How much more hopeful is the outlook now than when Gull said, "It is now universally acknowledged that the art of medicine is all but powerless in controlling the large class of diseases called zymotic. It may be there do not exist nor may ever be formed by art antidotes to their poisons. But should it be otherwise my duty at this moment still seems clear—that I ought not to stir up your minds to search for such secrets of nature. Upon this search too much time has already been wasted and an incalculable amount of life has been lost. Specifics will no doubt continue to be sought after, but preventive medicine will more largely obtain the suffrages of the best informed members of our profession.[10] Truly, as he says in another place, "the knowledge which seems exhaustive to-day may in the changing circumstances of the world be defective to-morrow." For it now seems probable that most if not all of these diseases, as we already know of some, bear with them their own antidote, and that as Sir John Sanderson has said, "Every injurious substance which is capable of being assimilated (in the physiological sense) by a living cell is also capable of exciting in it an abnormal reaction antagonistic to the first."[11]

I have not the requisite knowledge to enter into the most interesting but most difficult subject of immunisation and the phenomena presented by the agglutinative, bactericidal, and hæmolytic properties of the blood serum under certain conditions. The investigations which have been so actively carried on in recent years in these directions have greatly increased our knowledge of the blood and its component parts and we trust that they may lead to still further advances in the field of serum therapeusis—a field which offers a hopeful prospect for enabling us to counteract the bad effects to which specific disease-producing organisms are capable of giving rise in the living body.

INTERNAL SECRETIONS.

Another most important step onwards in our physiological knowledge and its application to the treatment of disease was made when we became acquainted with the connexion existing between that group of symptoms which we now call myxœdema and disease of the thyroid gland. Sir William Gull himself, in 1873, was the first to draw our attention to the cretinoid state supervening after adult age,[12] but it was from the researches of Ord, Reverdin, Kocher, Horsley, and Murray that the existence of what are spoken of as internal secretions of glands was suspected and proved.

The brilliant results from the administration of the thyroid gland or its extract in myxœdema raised our hopes and expectations that we might, by the administration of other glandular extracts, obtain benefit in those morbid conditions in which it appeared probable that an internal secretion bears a part. As yet these expectations can hardly be said to have been fulfilled. Neither in diabetes nor in morbus Addisonii has the administration of the pancreas or the suprarenal glands been followed by any marked or constant beneficial effect on the disease. The researches of Schäfer and Oliver have proved the physiological action of the extract of the suprarenal glands to be both constant and powerful and further researches may lead us to a better knowledge of the physiological functions of the internal secretions and enable us to make therapeutic use of them. Hitherto we have used these glandular extracts to supply the place of the normal secretions which we have inferred might be absent owing to disease being present in the secreting organ. Is it not possible—nay, probable—that it is not this simple absence but rather the presence of a vitiated secretion acting prejudicially on the organism which produces the evil with which we have to contend?

Further observations by Dr. G. Oliver[13] show the remarkable effects which are produced on the blood pressure by the administration of small doses of creatinin, uric acid and its compounds, glycogen, xanthin, and the purin bodies contained in food; while equally active depressors of arterial pressure are found in bodies so closely allied by chemical composition to those which increase it, as are creatin, hippuric acid, and hypoxanthin.

TROPICAL MEDICINE.

In other lines of research the progress made is not less remarkable. The ancients were well acquainted with the commoner forms of intestinal worms, although they were ignorant of the remarkable phases presented in their development. They have left us full and accurate descriptions of the clinical symptoms produced by them and the means which should be adopted for their cure.[14] Until a very few years ago we could hardly be said to possess more knowledge than our predecessors of the part played by the animal

[2] THE LANCET, Sept. 21st, 1867, p. 353.
[3] THE LANCET, March 16th, 1867, p. 326.
[4] Koch: Mittheilungen aus dem Gesundheitsamte, Band ii., 1884.
[5] Du Tubercle au Point de Vue de son Siége, de son Evolution, de son Nature, Paris, 1861.
[6] Etudes sur la Tuberculose, Preuves Rationales Expérimentales de sa Specie et son Inoculation, Paris, 1868.
[7] Tenth and Eleventh Reports of the Medical Officer of Health of the Privy Council, 1868–69.
[8] Collected Writings, Sydenham Society, p. 47.
[9] Ibid., p. 70.
[10] Ibid., p. 75.
[11] Presidential Address, Transactions of the Clinical Society, 1903, p. 7.
[12] Transactions of the Clinical Society, vol. vii., p. 180.
[13] Oliver-Sharpey Lectures, THE LANCET, April 30th (p. 1175) and May 7th (p. 1262), 1904.
[14] Paulus of Aegineta, book iv., sections lvii., lviii., and lix.

kingdom in the dissemination and propagation of disease in man. It had long been recognised that man shared with animals the liability to be affected by certain maladies—for example, rabies and glanders—but no suspicion existed of the important part which the lower orders of creation play in the maintenance and diffusion of some of the most widespread and deadly of the diseases which affect man.

Slowly and gradually the natural history of malaria and yellow fever has been worked out. M. Laveran, in 1880, first discovered and described the organism of paludism in the blood, and his discovery, like that of the tubercle bacillus by Koch in 1882, forms an epoch in the history of medicine. Laveran's observations were carried on by many others, of whom I must mention Marchiafava, Bignami, Celli, and Golgi, who, together with many other distinguished Italian *savants*, did so much to make us acquainted with one portion of the life-history of the malarial parasite, many years before its complete life-cycle had been discovered by the suggestions and reasoning of Manson and the laborious and persevering investigations of Ross. Already the work done, mainly under the auspices of the Liverpool and London Schools of Tropical Medicine, has begun to bear fruit not merely by increasing our knowledge of malaria and certain other forms of tropical disease but by having in the short space that has elapsed had a marked influence in diminishing sickness and mortality in places which were so deadly to European life that trade could hardly be maintained with them. Nor is it only in these hotbeds of fever that beneficial results have been obtained, as Professor R. Boyce's account of antimalarial measures taken at Ismailia shows. The result of the sanitary work put in action by the authorities of the Suez Canal has been eminently satisfactory. The attacks of malaria in a population consisting of about 1900 or 2000 Europeans and 7000 natives have fallen from 2089 in 1897 to 209 in 1903 and the mortality has correspondingly lessened. These highly satisfactory results have been obtained at comparatively small expense, the Canal Company having expended £4400 in filling up and draining the marshy ground whilst the special antimalarial forces—the drainage and the petroleum brigades—have together cost £720 a year, figures which contrast most strikingly with a previous "expenditure of £15,000 on works designed with the intention of improving the sanitary condition of the town and £13,000 in medicine and medical attendance,"[15] without the production of any beneficial results.

The mystery surrounding the sleeping sickness of Africa has been partially dissipated by the discoveries of Castellani, Bruce, and Nabarro and the remarkable life-cycle of the trypanosoma is in a measure unravelled. A similar chain of events appears to occur in Texas fever and probably in other morbid states the lower forms of animal life play a much more important rôle than is yet recognised. Recent investigations by Leishman, Donovan, Ross, and Christophers tend to show that the condition of chronically enlarged spleen and cachexia which we have been accustomed to ascribe to malaria is more probably dependent on another distinct micro-organism.

Interesting as is the connexion which we now know exists between the lower forms of life and the presence of disease in man I must not occupy your time by further reference to it and I must pass by the additions to our knowledge of the nervous system and its disorders, of the blood, and of the application of electricity in its various forms to the diagnosis and treatment of injuries and disease, for it is not my intention to attempt to review the progress of medicine during the years that have elapsed since the Association last met in this place.

THE PRINCIPLES OF PREVENTIVE MEDICINE.

It appears desirable that I should remind you thus briefly of some of the more striking changes which have taken place in our conceptions of diseases, their causes, effects, and our means of opposing them, for events crowd so rapidly on our notice in these days that we are apt to forget how short a time has elapsed since the veil was raised and we began to see—dimly it may be—the connexions which exist in disease as well as in health between man and his surroundings. Herbert Spencer's "environment" and Darwin's "survival of the fittest" depend to a great degree on forces which when these phrases were first made use of were not present to the minds of their inventors.

The exact knowledge, based on scientific research and demonstration, which we now possess of the cause and nature of disease has greater influence on preventive or State medicine than on clinical treatment. Recognising the sources of our ills we are in a position to avoid and to guard ourselves against them. To the general public the advances made are most palpable in the triumphs of modern surgery, which is in some danger of being led into excesses by the impunity with which operative measures can now be undertaken. This knowledge of facts in the place of the theories of former days leads me on to a consideration of the position in which medicine has stood in the past and that which it should now hold in relation to the public and the State.

IN GREECE AND ROME.

It is to be regretted that we know so little of the position which the practitioners of medicine held in the State in the Greek and Roman worlds. In Greece, at the period of its highest intellectual activity, we know from the references made to physicians by Plato and others that they were men of learning and possessed of considerable influence. From Plato also we learn that there were two or more distinct classes or grades of practitioners, for in the Laws the Athenian asks Cleinias: "You are aware that there are two classes of doctors?" Cleinias: "Yes, and did you ever observe that there are two classes of patients in States—slaves and freemen; and the slave doctors run about and cure the slaves or wait for them in the dispensaries ....., but the other doctor, who is a freeman, attends and practises on freemen?" and the Athenian stranger goes on to describe the differences in the mode of practice of these two classes of doctors.[16]

From this passage also we learn that the Greek cities at that time possessed dispensaries—*ἰατρεῖα*—places where the slaves and probably the poorer citizens were wont to consult the doctors. From another passage in the Gorgias it appears that in the Greek cities there existed medical officers who were appointed by the municipality, for when speaking of the power of rhetoric Gorgias says "that if a rhetorician and a physician were to go to any city and had there to argue in the ecclesia or any public ceremony which of them should be elected State physicians the physician would have no chance." Socrates: "You were saying, in fact, that the rhetorician will have greater powers of persuasion than the physician even in a matter of health." Gorgias: "Yes, with the multitude." Socrates: "You mean with the ignorant."[17] I fear we know to our cost that in matters of health the rhetorician and the politician is still not infrequently of more influence with the multitude than the physician.

Very little is known of the position of medical practitioners in Rome during republican times. The wealthier Roman families appear to have kept in their retinues slaves or freedmen who had received some instruction in medicine and surgery, most probably in some of the Greek colonies in Italy, but in Imperial Rome we know that in medicine the larger cities possessed some municipal organisation similar to, if not identical with, that which had been in force in earlier Greek times. Before the time of Antoninus Pius (A.D. 136) recognised medical practitioners were exempt from ordinary civil obligations and local taxation but their numbers had so largely increased by this time that it became necessary to limit the number of recognised practitioners in each city who should enjoy this immunity; and Pliny, who seems to have had nearly as bad an opinion of our profession as Cato, complains that the law unduly safeguarded physicians and that they alone could kill a man with impunity.[18]

The disorganisation which after the fall of Rome affected every community in Western Europe envelops the subsequent position of medicine in obscurity. During these unsettled times the doctors appear to have been attached to persons rather than to communities; and this condition prevailed to a greater or less extent until comparatively recent times, and is even now perpetuated in the honorary posts attached to the royal families.

Time does not permit me to sketch, however briefly, the steps by which in this country the mediæval guilds of

[15] Report by H.M.'s Agent and Consul-General on Egypt and the Soudan, April, 1904.

[16] Book iv., p. 720, Jowett's Translation.

[17] Gorgias: p. 456, Jowett's Translation.

[18] Natural History, chapter xxx., "Discunt periculis nostris et experimenta per mortis agunt, medicoque tantum occidere impunitas summa est."

barbers, barber-surgeons, and surgeons became gradually developed into the surgeons of to-day.[19] The better regulation of the profession in this country may be said to date from the institution of the Royal College of Physicians in 1518, which was intrusted with the general supervision of all persons not graduates of the two English Universities of Oxford and Cambridge who should practise physic throughout England, and to the granting of a charter by Henry VIII. to the barber-surgeons 22 years later.

THE BRITISH MEDICAL ASSOCIATION AND MEDICAL LEGISLATION.

Sir John Simon in his most interesting work on English sanitary institutions[20] has a chapter entitled "Growth of Humanity in British Politics." In it he traces the influence of the religious revivalism under the Wesleys and the noble work of Howard in arousing among the better-informed classes a humanitarian spirit which has been one of the many factors, and perhaps the most powerful, which led to the reformation of the criminal code, the abolition of slavery, and the Factory and Sanitary Acts of the nineteenth century. During the earlier part of the nineteenth century it was gradually brought to the attention of thoughtful men that steps should be taken to regulate the education and the practice of medical men. The first result was the passing of the Anatomy Act in 1832, which was followed by the appointment in 1834 of a committee of the House of Commons to inquire into "the laws and usages regarding the education and practice of the various parts of the medical profession in the United Kingdom." No report was presented by this committee although it took a great deal of evidence; part—that relating to Scotland and Ireland—was never printed and is supposed to have perished when the Houses of Parliament were burnt. Mr. Warburton, who acted as chairman of the committee, introduced in 1840 a Bill into the House for the registration of medical practitioners but found little support. Sir James Graham and Mr. Manners Sutton prepared and brought in a Bill, four years later, "for the better regulation of medical practice throughout the United Kingdom." The Government of the day declined to interest itself in the Bill, and no further action took place until this association—then called the Provincial Medical and Surgical Association—under the leadership of Sir Charles Hastings, brought the subject under the consideration of Lord Palmerston in 1853, and of Sir G. Grey in 1855, in the hope that the Government would promote the Bill which the association had prepared. Neither Minister would undertake to bring it in as a Government measure, and a private member—Mr. Headlam, M.P. for Newcastle—in 1855, and again in 1856, introduced a measure which represented the views of the association. By the influence of Mr. Cowper, then President of the Board of Health, the House of Commons referred the Bill to a select committee—a proceeding which eventually resulted in the Medical Act of 1858, which has been productive of incalculable benefit both to medical education and to the public. This association may well take pride in remembering that this was accomplished mainly through its influence and action.

POOR-LAW AND PUBLIC HEALTH LEGISLATION.

Contemporaneously with the awakening of public opinion to the necessity for a reform in the constitution of the medical profession by which the public might be able to discriminate between those who were and those who were not legally qualified to practise, the need for increased legislative power for sanitary purposes was recognised. The public mind had been aroused by the ravages of cholera which spread through the land in 1831-32 and to a less degree in 1848-49; whilst the revelations of the conditions under which the labouring poor were living contained in the reports of Dr. Neil Arnott, Dr. Kay, Dr. Southwood Smith, Mr. Chadwick, and others to the Poor-law Commissioners appealed to all but the most thoughtless and prepared the way for sanitary legislation.

I am not forgetful that from the earliest periods of civilisation it has been recognised that large centres of population have necessitated laws and regulations for the prevention of nuisances and the removal of refuse. These were among the most important duties of the ædiles in Rome, and in the records of mediæval London are constant references to the removal of nuisances, the cleansing of the streets, and the necessity for "avoiding the filthiness that is increasing in the river and upon the banks of the Thames to the great abomination and damage of the people."[21]

The dissolution of the monasteries and other religious foundations in the sixteenth century led to the whole country being flooded with pauperism, for however self-indulgent the ecclesiastics may have been they had always exercised supervision over the poor on their estates, and administered relief as required to those who were in the employment of the religious houses or of their numerous tenants. This deplorable condition of the nation gave rise in the early years of Elizabeth's reign to our present Poor-law, and during her reign and that of her immediate successors very stringent Acts of Parliament and municipal regulations were passed not only for the removal and prevention of nuisances but also dealing with vagrancy and mendicity and provision for the relief of pauperism and the care of the impotent poor. From that time onward numerous local Acts on a variety of subjects bearing on the national health were added to the statutes but no comprehensive scheme was instituted until we come down to the Victorian Era, and the passing of the Public Health Act of 1848 may be taken as the date of the rise of a fresh branch of medicine—preventive or State medicine.

It was then that the State publicly recognised what Hobbes 200 years before, when writing of the "Commonwealth," had indicated as the function of the governing power.

> The office of the Sovereign (be it monarch or assembly) consisteth in the end for which he was entrusted with sovereign power—namely, the procuration of the safety of the people, but by safety here is not meant a bare preservation but also all other contentments of life which every man by lawful industry without danger or hurt to the Commonwealth shall acquire to himself."[22]

The health of the people, both bodily and mental, is the principal asset of the nation. Without a vigorous and energetic population no nation can make progress and coincident with the cessation of progress is the commencement of decadence. We have heard of late very much about the deterioration and degeneration of our population. I cannot venture to express an opinion on such a complex and difficult subject but I can safely say that there exist no standards by which our present can be compared with our past condition and I greatly doubt if those who talk and write so volubly on the subject are acquainted with the reports made to the Poor-law Commissioners 60 years ago. The present state of our population is serious enough, and it behoves us all, medical men and laymen alike, to do what we can to ameliorate, if we cannot remove, the conditions which militate against the health and happiness of the population.

Steam and electricity have revolutionised the world and the conditions of modern life are now entirely different from those prevailing during the first decades of the last century. The food, clothing, housing, and circumstances in which large numbers of our population work are very different now in both our rural and urban populations from what they were then. Are the changes calculated to benefit the physical and mental condition of the people? or have all our boasted improvements proved snares and delusions? These questions are fraught with the greatest importance to the nation, questions which in the absence of any known standards for comparison with the past it is difficult, if not impossible, to answer. I trust that the committee of the Privy Council on the physical disability of recruits now engaged in framing its report may urge on the Government the desirability for a physical census of the nation being taken and renewed from time to time and that the physical condition of the children in our primary schools should be watched, recorded, and reported on as regularly and carefully as their educational progress. It is only by information of this sort, collected by competent persons and duly weighed by those capable of forming an opinion on the medical aspects of the question, that improvement can be hoped for.

THE CODIFICATION OF PUBLIC HEALTH LAW.

I have already alluded to the Public Health Act of 1848 as marking the introduction of preventive or State medicine. Since that date numerous royal and other commissions have been engaged in the investigation of a very large number of

[19] For much interesting information on these points, vide South's Craft of Surgery, and papers by D'Arcy Power, F.R.C.S., in the Medical Magazine, 1899.

[20] 1890.

[21] Order of Edward III., 1357, vide Sir J. Simon, p. 40.

[22] Hobbes's Leviathan, chapter xxx.

subjects bearing on the national health, with the result that from that time to the present the legislature has been continually occupied in passing new measures for the furtherance of health or the amending of old ones.[23]

A certain amount of consolidation of the sanitary law was effected by the Act of 1875 but the mass of sanitary legislation and the involved nature of it prevent the public, and I might say the profession also, from being able to follow it. Its complexity in part arises from different departments of the central government being responsible for the means which are taken for safeguarding the public health.

Legislation at the present time appears to me to be in advance of administration and it is not so much fresh legislation that is needed as the simplification and codification of the existing law. The administration of the law cannot be much in advance of the knowledge and feeling of the public and while giving full credit to municipal and other sanitary authorities for the good work already done and the efforts they are now making, the medical officers of health throughout the country are painfully aware how great is the ignorance shown by the mass of the population of the principles on which the public health depends and how great is the necessity for educating the general public to a proper appreciation of the elemental facts of sanitary science.

The all-important part that micro-organisms play in the putrefaction and decomposition of organic matter and in the production of disease was unknown when sanitation first seriously occupied the attention of the legislature. The air, the earth, and the waters all teem with them; and although we recognise in some our deadliest foes we must not forget that it is due to the beneficent action in their countless millions of other members of this group that we mainly owe both the purification of the water we use and the earth we live on; if it were not for their action we should be smothered by our own refuse. As a consequence, this increase of knowledge has rendered it necessary for those who hold important positions in connexion with preventive medicine to have special preparation for their work. The need for this was foreseen by Sir Henry Acland who, in his address, remarks that:

> The Government will have to define the duties to be discharged by public health officers or other officers of public medicine and the General Council of Medical Education will be able to direct the education of those who aspire to the performance of the duties so defined.

The General Medical Council and the educating bodies have fully acted up to this expectation of Sir Henry Acland and the universities and diploma-granting corporations have established special courses of instruction and special examinations requiring a very high standard of professional knowledge from those who desire to qualify themselves for holding responsible posts in preventive or State medicine, which is now justly regarded as the highest branch of our art.

Does the large body of highly qualified officers of health and do the medical officers of the Local Government Board possess the influence in the Government and in the country which they ought to own? I fear not; neither in the Government nor in the country do they hold the position which they are entitled from their high qualifications and the importance of their duties to command. Your President last year directed your attention to the need for reform both in the central authority—that is, the Local Government Board—and in the local authorities.

THE INEPTITUDE OF THE TREASURY REPORT.

During the past year your council and its medico-political and public health committees have been engaged in framing a Bill which it was hoped might be brought before the consideration of the Government. I am afraid from the nature of the report of the Treasury Committee appointed to consider the position and duties of the Board of Trade and the Local Government Board there is not much prospect of the importance of the Public Health Department of the Board receiving any increase either of power or payment. The health of the nation, on which its success and prosperity depend, is thrust into the background with the remark that the President of the Board "has the advantage not only of the medical officer of the Board but also of the general administrative experience of the permanent secretary." In an article in the *Times* of June 14th last upon the report the writer remarks: "The commercial community cannot hope to exercise the influence due to its position in national life so long as its official representative is treated as of second-rate importance." These words appear to me to apply with even greater force to the Department of Public Health in the Local Government Board.

THE DUTIES OF THE LOCAL GOVERNMENT BOARD AND MEDICAL OFFICERS OF HEALTH.

I do not think that there would be any advantage in my dwelling on the terms of the Bill which your Council proposed but there are certain points in connexion with it that should be continually pressed upon the attention of the President of the Local Government Board and the Government:

1. That whilst the administration of sanitary legislation must be left to the local authorities the central authority should act as an advisory as well as a supervising authority.

2. That both in the Local Government Board and in the local authorities the medical element should have greater weight and authority than at present and that the medical officers of health throughout the country should be responsible to the Local Government Board as well as to the local authority and hold their office during the pleasure of the Local Government Board and not at the will of the local authorities.

3. That steps should be taken by which the medical officers of health and the Local Government Board, which at present is the department mainly charged with supervising the administration of the Sale of Food and Drugs Acts, should undertake further duties of supervision and watchfulness in relation to the purity and wholesomeness of articles sold for food.

NEED FOR SUPERVISION OF THE SALE OF FOODS.

The need for such increased supervision was forcibly brought to the attention of the commissioners appointed to inquire into arsenical poisoning. At the present moment there are no means by which the officers, medical or other, of county, borough, urban, or district councils who are responsible for the local administration of the Acts relating to the sale of food can enter the premises and obtain information concerning the nature of food-stuffs or the process of their manufacture. At present the maker of food-stuffs sold under a fancy name is under no obligation to submit to any authority the composition of its ingredients. It is only after the food-stuff has been placed on the market that any control can be exercised by samples being taken for analysis, which, although showing the absence or presence of deleterious matter, gives but little guide to the suitability and value of the preparation as a food. The enormous bulk of these fancy and largely advertised foods on the market, both home-made and imported, renders it essential that further power in the supervision of food should be placed in the hands of the health authority.

RURAL HYGIENE

The necessity for sanitary regulations being so much greater in large towns with their dense populations, manufactures, and difficulty in disposing of their refuse naturally led to the earlier efforts in the direction of improved sanitation being especially directed to their most urgent needs, and hence it has arisen that the methods of sanitation applicable to large towns have been accepted by the public as the only ones and are imitated in rural districts to the great loss and harm of the community.[24] It is greatly to be regretted that Mr. Chadwick's doctrine that not only domestic sewage but all sorts of refuse are best removed by the scour of running water has received such general adoption. Whilst the advantage of the present system of sewerage, which although ruinously expensive is undoubtedly very great in our large towns and must perhaps be perpetuated, it is not in accordance with common sense that it should be recklessly applied throughout the country. The disposal of the liquid sewage, not only of our large towns but of our villages, villa residences, and country gentlemen's houses, has become a most difficult problem for modern sanitarians. No one has any more justification in

[23] Of these the most important have been the Act of 1858 by which the powers then vested in the Board of Health were, together with other powers, transferred to the Privy Council; that of 1871, when the Local Government Board was instituted, vesting therein certain functions of the Secretary of State and Privy Council concerning the public health and local government, together with the powers and duties of the Poor-law Board; the Public Health Act of 1875, the amendment of the Medical Act, 1866, and the Local Government Acts of 1888 and 1894.

[24] For a striking instance, vide Rural Hygiene, third edition, p. 233, G. Vivian Poore, M.D., 1903.

injuring his neighbour by wilful or culpable negligence of sanitation, or by the means he takes to protect himself from the evils he has created, than he has in appropriating his neighbour's goods or trespassing on his premises. "In rural and semi-rural districts the individual ought no more to ask others to keep him clean than he asks others to feed him or clothe him."[25] The conscience of the public and of the individual needs awakening to the immorality of injuring the public weal for private convenience. We daily see instances of small towns and villages expending vast sums of money in systems of sewers and sewerage works. A system of sewerage necessitates a constant water-supply far in excess of the needs of the inhabitants for domestic use; it introduces a source of danger of pollution for the springs and wells of the locality, and renders necessary the introduction of waterworks to supply uncontaminated water—if, haply, such can be found—brought, it may be, from a distance, and entails a heavy and permanent charge on the locality. The interest of the money thus spent would in many instances provide for the necessary expenses which a proper system of scavenging would entail.

URBAN HYGIENE.

Is the Local Government Board, and are our urban and rural sanitary authorities, really guided by their sanitary officers in these matters? It is hard to believe it, for one sees around one in the metropolis and in our provincial towns and rural districts numberless instances of divergence from the principles of sanitary science. The enormous value of land in London and our large cities has led to a remarkable change in the character of their buildings. At the very time that it has become generally recognised that fresh and moving air is one of the necessities for healthy life and whilst vast sums are being paid for securing open spaces and widening streets the private speculator is allowed to erect huge piles of bricks and mortar which effectually block the currents of air which are required to freshen and vitalise the atmosphere of our crowded streets and thickly populated courts. Is this wise? Is it in accordance with our present knowledge? The Tudor and Jacobean architects understood much better the principles necessary for healthy life; we can have no better examples than those around us here. The colleges are laid out with spacious quadrangles freely admitting air and sunlight, surrounded by sets of rooms which are for the most part open to the air on both sides and seldom more than three storeys in height. The greatest enemies that the disease-producing microbes have are air and sunlight—some of them are deprived of vitality and their power of evil by a few hours' exposure to sunlight. What chance has the microbe of meeting these conditions in the piles of brick and mortar which are now built around central wells, into which a few rays of daylight struggle by means of glazed tiles and to which the purifying and cleansing action of a brisk wind can never reach?

We see equally regrettable proceedings, although of a very different kind, going on in the outskirts of London and our large provincial towns and I regret to say in many of our rural villages. Rows and rows of houses—what are often termed "workmen's houses"—are erected on the plan of third-rate London streets: no ground round them, no gardens; the minimum space allowed by the sanitary authority of the district is all that intervenes between them and a similar row, and unfortunately sanitary authorities in their by-laws have based them on ones which may be applicable to London but are calculated in suburban and rural districts to reproduce all the evils of the town. Sewers and waterworks are provided at the expense of the district, not for the benefit and advantage of the inhabitants, who would rejoice in a piece of garden ground and space around their homes, but to allow the landowner and builder to make more money out of the ground-surface at their disposal, to the hurt and damage of the district and the nation.

In the decennial supplement to the Registrar-General's report for 1895, Table R shows that the rate of mortality in England and Wales is in proportion to the density of the population, the districts most densely populated having a mortality two and a half times greater than those more thinly inhabited, the mortality per 1000 living being 12·70 in districts with 138 persons to a square mile, and 33·00 in the most densely populated having 19,584 to the square mile, the corrected death-rate for "Urban England" being 22·32, whilst that for "Rural" was 16·95. Infantile mortality is by universal consent among sanitarians taken as a measure of the salubrity of a district, and an examination of Tables S and T of the Registrar-General's report shows how excessive is infantile mortality in "Urban England." Taking the report for 1901, we find the infantile mortality of the whole country is 166 in every 1000 births for males under one year of age and 136 in every 1000 births for females of the same age, the urban death-rate being 180 for males and 149 for females, the figures for "Rural England" being 136 and 107 respectively. Table Q shows the same in a still more striking manner; the agricultural counties of Herts, Huntingdon, Wilts, and Westmorland, in which there are no large towns and no crowded industries, stand lowest with an infantile mortality not exceeding 100, whilst Northumberland (182), Durham and Lancashire (179), and Nottingham (172) have the highest infantile mortality of all our counties, London (149) and Middlesex (130) holding intermediate positions. Other factors besides density of population undoubtedly have a share in producing these results; but there can be no doubt that density of population is one of, if not the, most important of the causes producing this deplorable sacrifice of life.

Very interesting figures are given by Dr. J. F. J. Sykes in his Milroy lectures, 1901, showing that whilst the general and infant mortality in the Peabody and model buildings in St. Giles's is much below that of London generally, as would be expected from the class of persons inhabiting them and the supervision to which they are subjected, the death-rate from certain infectious diseases was in excess of that of London, demonstrating the risk which is run by aggregating, even under favourable conditions, a large population under what may be considered one roof.

The phrase "back to the land" has of late been much in the mouths of many would-be philanthropists and politicians and much has been written on this theme in the ephemeral literature of the day. I fear that as a remedy for physical deterioration or agricultural depression it must be regarded as utopian; even the powers of the legislature cannot prevent the course of economic laws from taking effect but the legislature might, I venture to think, do much which would aid in preventing the continual growth of known and acknowledged evils. It is the province of the legislature, as Hobbes said, to procure the safety of the community even if it interferes with the freedom of individual action; it is done every day in connexion with infectious disorders and with the approval of the public. Our sanitary authorities, guided as they now should be, not by theories of disease, but by facts capable of scientific demonstration, should have the power to restrain both individuals and public bodies from perpetuating and increasing evils which threaten materially to injure our welfare and prosperity as a nation. Overcrowding, whether of houses or localities, should be more stringently dealt with; facilities should be afforded for the removal of certain trades and manufactures from crowded centres, and public money should be expended in affording ready means of access and communication with them. Hitherto our modern facilities of locomotion and telegraphic and telephonic communication have had the effect of increasing rather than relieving the congestion of our central districts, whereas they might be used for the opposite purpose and enable many of our trades and much of our business to be carried on outside the limits of our towns. Rural sanitary authorities should be taught to shun instead of imitating those methods of sanitation which have been found by experience so costly, so difficult to manage, and so productive of harm.

I wish, Mr. President, that I had been able to bring before you the question of the national health in a manner worthy of yourself, this great audience, and the subject; it is one of supreme importance, far transcending the ordinary political issues of the day. I have endeavoured to point out the need there is for us all to use every means in our power to educate the public in this most vital question, to impress upon them that sanitation is no longer a matter of medical opinion but is based on facts arrived at by the instrumentality of scientific methods and capable of being scientifically demonstrated. Legislation, however good, cannot be effective unless it has the willing concurrence of the people. Finally, I would urge that this powerful association should use its influence to impress both the public and the Government with the desirability of a physical census of the nation being taken from time to time and the necessity for the registration of the physical condition of our children on whom the future of the country and the empire depends.

[25] Poore: Rural Hygiene, third edition, p. 213.

The Wightman Lecture

ON

THE HEREDITARY BIAS AND EARLY ENVIRONMENT IN THEIR RELATION TO THE DISEASES AND DEFECTS OF CHILDREN.

Delivered before the Society for the Study of Disease in Children on July 15th, 1904.

BY R. CLEMENT LUCAS, B.S., M.B. LOND., F.R.C.S. ENG.,

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MR. CHAIRMAN AND GENTLEMEN,—In accepting the courteous invitation of the Council of the Society for the Study of Disease in Children to deliver the first Wightman lecture I feel that I have incurred a double responsibility, for it rests with the first lecturer to give a short history of the circumstances which have led the generous founder to establish this annual address and then to further his wishes still more by attempting to stimulate the observation and study of those diseases which are peculiar to children, or of such as are modified in their effects by the presence of immature and developing structures.

I may state that my qualification for this office rests on the fact that, knowing all the circumstances, I can best interpret the founder's feelings, born of the anguish caused by the death of his only son, which have led him to endow this lecture: first, as a permanent memorial to his heir, in the sincere and fervent hope that other parents may be spared the trials he has gone through; and secondly, recognising how modern discoveries have lessened the terrors of the disease from which his son died, he trusts that future scientific observations may lower the mortality of other diseases to which children are liable and that this lecture may be the means of establishing or of diffusing such knowledge.

Alexander Cockburn Wightman, the only son of Mr. Charles Wightman of Portland-place, was born on August 14th, 1877, and died from diphtheria on August 16th, 1884, having thus just completed his seventh year. The life history of a child dying at this early age lies engraved for the most part in the hearts of his loving parents and rests concealed within their breasts. To attempt to wrench it thence and expose it to public gaze involves a cruelty from which I have shrunk, yet I feel that in leaving much unsaid that might have been gained from these sources I may, perhaps, do scant justice to those good qualities of heart and mind which this little fellow so early manifested. Bright, affectionate, and unselfish he was a centre of intense happiness within his family circle; intelligent beyond his years and perhaps beyond his strength he gave promise of future high mental development; whilst his warm and impressionable nature was deeply "moved with concord of sweet sounds" and music became his favourite pastime. Many little considerate acts proved his sweet unselfish nature and endeared him to all who knew him. He became the sunshine of his home. But a dark cloud overshadowed it when in August, 1884, he was seized with a malignant form of diphtheria associated with a croupy cough and intense albuminuria. Tracheotomy became necessary to relieve his breathing on the second day and afforded him immediate relief; but 24 hours later cyanosis again occurred and was again relieved by removing a quantity of false membrane from the trachea; after this uræmic convulsions ensued and in one of these attacks about 48 hours after the operation he ceased to breathe. Such is the brief history of this short life so abruptly closed by a disease the bacillus of which at that time was unknown and the serum antidote for which was not discovered till some ten years later.[1]

It has been said of great reformers and of leaders in science such as Copernicus and Galileo that they lived before their time because their views and discoveries were not sufficiently appreciated during their lives; but far more truly may it be said that many children, such as little Wightman, have died before their time, simply because the results of discoveries subsequently made were not then available to check the progress of the diseases to which they succumbed. Those who are said to have lived before their time have their fame revealed and their monuments engraved by succeeding generations; but what is left to those who die before their time? What might have been for them to accomplish is lost for ever in conjecture. The developing frame, the expanding mind, the deepening affections, all are lost, and there remains but a vision of the past. No one can interpret what can never come to pass and the hidden forces of potential energy cut short by death are lost for ever. But there is left the record of a short life of unsullied innocence, such as led the great satirist of nearly 2000 years ago to proclaim the apparent paradox that the greatest reverence is due to a boy—*Maxima debetur puero reverentia*. With these few words I pass to the second part of my task and as we are in the initial stage, both as regards our society and its relation to this lecture, it may be well to start with the beginning of things and I have selected as my subject "The hereditary bias and early environment in their relation to the diseases and defects of children."

I will say at once that it is not my intention to discuss the various theories of heredity, the "pangenesis" of Darwin, the "physiological units" of Herbert Spencer, or the "ancestral germ-plasm" of Weismann, not to speak of the various modifications of such theories which have more recently been suggested the better to accord with recognised facts; but we shall treat the subject from a purely clinical point of view. We start with the general axiom handed down from all time that a child must in many general characteristics resemble his parents; his height, his complexion, his features, his hair will so far be determined by his parentage that strangers are usually struck by a certain family likeness. When there is a wide distinction in appearance between the parents it is often easy to trace the preponderating influence of one or the other of them and this is often suggestive of the relative vigour of the father or the mother. Thus a peer who married a lady many years his junior had a family of eight children, only one of whom carried the height, features, and complexion of the father, all the others resembling the mother. It is not improbable that the relative vigour of the parents may account for the variation of individuals of a family as well as for that reflected resemblance which may often be traced to the ancestors of one or other parent.

At first I would speak of a peculiarity, not infrequently met with, where the strength of the family is found centred in one or other sex. This is to some extent illustrated by little Wightman, for he had a sister exposed to precisely the same influences, who suffered at the same time, but who recovered without presenting any serious symptoms; and relative delicacy of the males compared with the females had been noticed in other branches of his mother's family. Instances might be quoted without number of families in which there is a great preponderance of one sex, whilst the individuals of the other sex are delicate and die young. The centenary of Cobden reminds me that Richard Cobden had an only son who died at the age of 15 years and five daughters, four of whom are living at ages approaching or past 60 years. When the strength of the family is concentrated in the female line we meet with a common cause of the extinction of titles. I take haphazard the Barony of Rivers. The last peer died in 1880 at the age of 19 years, but his four sisters are all living at advanced ages. Some regard the excessive production of girls as an indication of a weakening of the reproductive function and it has been asserted that a common cause of the extinction of titles is due to the holders marrying heiresses for the sake of their fortunes.[2]

[1] The bacillus of diphtheria was first described by Klebs in 1883 as an organism to be found in the diphtheritic membrane, but it was not till a year or two later that Löffler cultivated it in artificial media and proved its communicability by inoculation, since which time it has been called the Klebs-Löffler bacillus. Behring began his experiments with serum in 1890 but it was not till 1894 that a satisfactory serum suitable for the human subject came into use. Herringham draws the following contrast between the cases before and after the introduction of the serum treatment at St. Bartholomew's Hospital. During 1893 and the first part of 1894 95 patients were treated under ten years of age with 50 deaths, or 52·7 per cent. From July 1st, 1894, to July 3rd, 1895, 50 patients were treated with antitoxin serum, of whom eight only died, or 16 per cent.

[2] Galton taking the legal peerages showed that marriage of an heiress caused extinction of the titles in 16 out of 31 peerages. Again,

Instances might readily be quoted of families in which there was a large preponderance of boys and in which the girls were delicate or died early. It may, I think, be regarded as generally true that when there exists a very strongly marked tendency to the production of one sex the other sex presents less vitality.

Another general characteristic which is distinctly hereditary is longevity, which may be translated into a power of resistance to disease; and as its antithesis, brevity of life, tends to obliterate itself, length of life with the aid of selection and hygienic surroundings ought gradually to be extended and this recent statistics have proved to be taking place.

When we inquire what diseases may be regarded as hereditary we meet with a difficulty at the very threshold of our inquiry, for diseases formerly thought to be constitutional and hereditary are yearly diminishing under the light of modern discoveries. It is interesting to look back and note what diseases were thought to be hereditary 40 or 50 years ago. Thus Dr. W. Sedgewick, writing on this subject in 1863, gives pityriasis versicolor of the chest (long known to be a fungus disease) attacking the males of a family—father, sons, uncles, and cousins—as a hereditary disease. A hereditary horror of soap and water might possibly have existed in this family and led to the spread of this easily destroyed fungus among the various members. Those who were brought up to a careful study of diathesis as a cause of hereditary disease will remember what a shock was given to all preconceived ideas of tubercle by the discovery of Koch's bacillus. It is interesting to read how this deeply impressed idea of a diathesis or constitutional disease caused physicians before that time to shut their eyes to the most obvious facts. Let us turn to that most eloquent writer, Sir Thomas Watson, whose book on medicine so long held sway as the classic authority and read what he says on phthisis. He asks, "Is phthisis contagious? No. I verily believe it is not. A diathesis is not communicable from person to person. Neither can the disease be easily, if at all, generated in a sound constitution. Nor is it ever imparted to another, even by one scrofulous individual to another." Then he goes on to explain away the obvious cases of contagion: "A wife watches the death-bed of her consumptive husband; and presently sinks herself under consumption: and there may be no tubercle or acknowledged examples of scrofula in her pedigree. Yet even here the latent diathesis may fairly be presumed to have existed. Very few families are perfectly pure from strumous intermixture. The predisposition may be slight, it may be dormant for a generation," &c. This shows how a predominant theory may close the eyes of distinguished observers to obvious facts. When I became attached as surgeon to out-patients at the Evelina Hospital for Children I made careful inquiry as to the family history of every case of early tuberculosis that came under my observation. These were cases of tuberculous abscesses of skin and cellular tissue, tuberculous glands, dactylitis, bone and joint disease, tuberculous epididymitis, and lupus. My cases went to show that in cases of infantile tuberculosis occurring under the age of two years one or other parent was nearly always found suffering from phthisis and in some few cases where both parents were suffering from phthisis the disease began early and generally proved rapidly fatal. These observations were made to prove the effect of diathesis and double diathesis on the offspring, but the obvious cause now easily understood was the atmosphere charged with tubercle bacillus in which the infants resided. Are we then to throw over tuberculosis altogether as a hereditary disease? We know that any type of person sufficiently depressed in health and inoculated with, or exposed to, Koch's bacillus may acquire tubercle—the short, the tall, the fair, the dark, the ugly, and the good-looking. But were the old observations as to the particular type prone to phthisis all wrong? Those who think so declare that the type described was formed of persons already suffering from tubercle in whom the refined features, slim figure, and pearly sclerotics only indicated a wasting disease that had commenced its work.

Others regard the type or diathesis as indicating merely a hereditary weakness of resistance to the invasion of the tubercle bacillus. But this opens up another question, may not the type have been produced by the effect of the disease in preceding generations? Phthisis is a chronic disease which may go on for years. By consolidating the lungs it causes contraction of the chest. By diminishing the cellular tissue it gives refinement to the features and causes the eyes to appear larger. By diarrhœa and perspirations it clears the complexion. By obstruction to the circulation it gives a peculiar shape to the finger-nails. Now may not the variation in appearance thus brought about be impressed on succeeding generations? If so, the type of the diathesis becomes the *hereditary effect* not the *hereditary cause* of the disease.[1]

There is yet another view of the transmission of tubercle suggested by Cohnheim, but developed by Baumgarten, that the bacillus actually penetrates the germ or sperm cell and is in this way directly conveyed to the next generation, being held quiescent by the rapid development of the cells of the ovum but subsequently during the life of the growing or fully developed animal multiplying and producing its effects. It is founded on the analogy of the pébrine disease of the silkworm the ova of which Pasteur showed become infected with the parasite yet hatch normally, but the caterpillars produced die subsequently as the result of the growth of the parasite within them. This view is supported also by the experimental introduction of the bacillus into fertilised hen's eggs, in which way tuberculosis in chickens has been produced. Until, however, the bacillus is actually seen within the germ or sperm cell this suggestion must remain a somewhat improbable theory. If true it leaves the future of the child born of tuberculous parents hopelessly handicapped from the earliest phase of his existence. On the other hand, inoculation through some abraded surface, or infection through the air, or the tuberculous milk of the mother or a bovine substitute, are conditions all-sufficient to account for early tuberculosis. If the disease be produced in this way a far more hopeful horizon is opened up for the child of tuberculous parents. Change of environment, removal from the rooms infected by the parents to fresh mountain or sea air, and pure nutritious diet give a reasonable hope that the child may escape the disease and grow up a useful member of society.

Another disease which through ages has been regarded as hereditary is leprosy, a disease so ancient that it was described in the "Ebers papyrus" 1300 years B.C. and prescriptions for the cure of it are said to date 2000 years B.C. Its contagiousness was also recognised or believed to exist from the earliest times, so that lepers became outcasts. Segregation has been for centuries the means adopted to prevent the spread of the disease and is still enforced with greater or less stringency in leprous countries. That leprosy was believed to be hereditary in the days of the Hebrew prophets may be gathered from Elisha's curse on his servant Gehazi, "the leprosy therefore of Naaman shall cleave unto thee, and unto thy seed for ever." Up to quite recently its heredity was a prevailing belief among medical men; but the Indian Commission failed to find histories of the disease in the families of more than 5 or 6 per cent. of the lepers examined and, what is still more remarkable, Hansen, who went to America to trace the descendants of 160 Norwegian lepers who had emigrated to that country, found that not one of their descendants had inherited the disease. Since the discovery of the bacillus lepræ by Hansen in 1871 the cause of the disease has been made clear and its inoculability rendered highly probable. True, experimental inoculations have rarely been successful and the lower animals appear to be immune, but that the bacillus found in the characteristic nodules is the cause of the disease there can be no reasonable doubt. The manner in which the disease is spread remains to be elucidated but this is only a matter for further observation. How few years have elapsed since the organism of malaria was shown to be carried by the anopheles mosquito. Yet no educated man can now doubt the evidence resulting from the exact scientific observations which demonstrated the origin and mode of distribution of that disease. When it is once clearly shown how the bacillus lepræ is introduced into the body all discussion as to hereditary transmission of the disease will cease. It may be, as indeed was suggested by Virchow, that certain dispositions may show less resistance to this bacillus as certain persons show less resistance than others to the bacillus of tubercle, and that certain families in this way may be more prone to the disease than others. But the children born of

he found 14 instances in which the eldest son of a first peer married an heiress, resulting in eight cases of absolute sterility and two of only one son.

[1] This is a Lamarckian argument which would not be admitted by the followers of Weismann.

leprous parents are not leprous and if early separated from their parents rarely become so. To save the children it would seem as urgent, as in the case of children born of tuberculous parents or even more so, to remove them at once from their unhealthy surroundings to a district free from leprosy. I cannot end my remarks on this disease without paying a tribute to the highly scientific investigations of this scourge by my old friend and pupil, the late Dr. Beavan Neave Rake, who fell a martyr to this horrible malady as the result of devoting his life to the alleviation of the sufferings caused by it among the natives of Trinidad.

After what I have said of leprosy I need scarcely more than allude to malaria, which in lectures delivered before the Royal College of Surgeons in 1884 was described as a climatic diathesis. The protozoon was discovered by Laveran in 1880 and its life-history has since then been worked out—its inoculation after sunset by the night-feeding anopheles and its destruction by quinine. Its heredity therefore need not be discussed but the effects of malaria in infancy and childhood are most injurious, not only on growth and development but especially on the mental faculties of the child. Protection by avoidance of exposure after sunset and by quinine and early removal to a non-malarious district should be insisted on for the healthy rearing of children born in malarious districts. With tubercle, leprosy, and malaria taken out of the diatheses and hereditary disorders by the discovery of their respective parasites and classed under infective diseases the belief in general hereditary diseases has been very much shaken.

We pass now to the consideration of a disease which we know can be transmitted by either parent to the offspring during the active stage of the disease. I allude to syphilis. From one generation to the next it passes, but beyond that transmission is very doubtful. I doubt whether a disease propagated only so far deserves the name *hereditary* and I am inclined to suggest that the term *transmitted syphilis* far more correctly expresses our knowledge of this disease in childhood than the term *hereditary syphilis* which is commonly employed. This disease, so aptly described by the late Dr. W. Moxon as a "fever diluted with time," becomes transmissible owing to its lengthened period of activity, but the exact process of transmission will remain obscure and to some extent theoretical until the actual organism causing the fever, be it protozoon or bacillus, is discovered. At present we only know it by its effects. Mr. J. Hutchinson, whose clinical researches in this disease cannot be too highly praised, regards the disease as capable of being carried by either the sperm or germ cell to the fœtus or by the mother to a healthy fœtus if she be infected during her pregnancy. What is certain is that if both parents suffer severely from the disease the results to the offspring are doubly disastrous. I have notes of a case of this kind in which the first eight conceptions ended either in miscarriage, premature births, or the births of children that only survived a short period, and it was not till the ninth that a child was born with sufficient vitality to live through the first two years.

In criticising the term *hereditary* in its relation to infantile syphilis I mentioned that it was doubtful if the disease could be transmitted to a third generation. I have notes of only one case bearing on this subject, but it is a very striking one. A blind man met a blind girl at a school for the blind and they married. They were both characteristic specimens of transmitted syphilis, having notched teeth, opaque corneæ, square heads, and scarred mouths. The man was admitted under my care for syphilitic bone disease and hearing that his wife had an infant two months old I sent for it. The child was not a fine one but she was quite healthy and during the time I watched her, more than a year, she showed no signs of transmitted disease. Mr. Hutchinson says that about eight cases have come under his observation in which persons undoubtedly the subjects of inherited disease have become parents. With one doubtful exception he had never been able to discover any evidence of disease in the offspring.

Syphilis is a disease over which drugs exert a powerful controlling influence and under favourable surroundings and good diet it tends to wear itself out. In comparing syphilitic with tuberculous families it will generally be found that the later children of syphilitic parents are the most robust, whilst the elder children of phthisics, that is those farthest removed from the later stages of the disease in the parents, are the most healthy. Syphilis although apparently not transmitted as an active disease to the third generation nevertheless has such an effect on the developing infants of the second generation as to lower their general physical type, which is shown in stunted growth, flattened bridge of the nose, imperfect teeth, coarse skin, and general defective development. The new type thus formed will have a tendency to be transmitted and by intermarriage to be rendered more permanent and this disease thus becomes one of the causes of physical degeneration in large cities.

Another disease more especially occurring in large towns and responsible but to a less extent than syphilis for physical degeneration is rickets. So far as our present knowledge carries us this is a purely dietetic disease but it can be transmitted both as a tendency and as a type. It can be produced in any child by withholding proper nourishment and substituting an innutritious diet. Ignorant artificial feeding lays the foundations of rickets which first shows itself in the over-distended abdomen, perspirations, capricious appetite, and irregular bowels, then follow the enlarged epiphyses, the bending of bones, the softened ligaments, large head and widening between the eyes, beaded ribs, and L-shaped thoracic depressions. It is a common disease in underfed puppies and by breeding from rachitic types the dachshund has been specialised with its large head, long body, short bent leg and thigh bones, and splay feet. The most approved type of field spaniel seen at dog shows is also a good specimen of hereditary rickets. The general effect of rickets is to enlarge the head and shorten the stature. So long ago as 1881 in a discussion at the Pathological Society I suggested that it might be justifiable to induce rickets artificially in microcephalic idiots and small-headed infants with a view of giving more room for the brain to develop. I think it may be said that persons who have recovered from rickets and have afterwards been well nourished often show great capacity for learning, so that this disease offers some compensation in greater skull capacity for the inconvenience of bow legs or knock knees, all of which may be corrected by surgical treatment. But a child that has been the subject of rickets never attains to what should have been his proper height.

The two diseases, syphilis and rickets, the one dependent on uncontrolled vice and the other on injudicious or insufficient feeding and bad air, are the chief causes of the stunted growth and weak physical development of the lower orders in large towns. We have only to watch an organised demonstration of those out of work march through the streets of London to have brought home to us the wretched specimens of humanity reared in the slums and alleys of this great metropolis. Their poverty is seen to be obviously due to incapacity, their incapacity to defective development, and their defective development to moral and physical degradation. Every encouragement should therefore be given to those societies whose work it is to rescue children from the pernicious and unhealthy surroundings of towns and bring them up in the fresh air of the country.

Rheumatism is another disease or group of diseases which has been ranked as a diathesis and regarded as hereditary. Some believed rheumatic fever, rheumatoid arthritis, and gout to be simply phases of the same diathesis at different periods of life. Others with clearer insight recognised two distinct diatheses, a rheumatic and a gouty. But rheumatic fever runs a course with definite symptoms like an acute specific fever and now that a diplococcus has been found in the rheumatic nodules, joints, and vegetation on the valves, which can be cultivated and be used to reproduce the disease in the lower animals, this disease will soon be classed with other specific fevers and the idea of its being hereditary will disappear. There seems, indeed, to be evidence of "rheumatism houses" as there are "tubercle houses" and "cancer houses," probably low-lying badly-drained places where such organisms as cause the diseases once introduced continue to flourish. I am inclined to think that the history of joint diseases will soon have to be rewritten entirely and the so-called rheumatisms will be classified as inflammations of joints dependent upon this or that organism. We already know that the gonococcus whether introduced through the conjunctivæ or urethra may cause a specific inflammation of a joint in which the coccus can be traced. We know that the pneumococcus, bacillus coli, streptococcus, and staphylococcus may all attack the synovial membranes, and probably there are others as yet undistinguished which induce special inflammations.

When we come to gout we recognise another dietetic disease similar to, or rather the antithesis of, rickets. Gout like rickets can be produced in a single generation and again

like rickets it shows a tendency to be reproduced in succeeding generations. Rickets is caused by the under-feeding of infants, gout by the over-feeding of adults with the addition of fermented liquors. In considering the heredity of gout, which is said to exist in three-fourths of the families of the leisured class, it is necessary to remember that the children are brought up as a rule in the same affluent circumstances as their parents and are early taught to live in the same way. The type of man usually regarded as gouty is illustrated by the John Bull of *Punch*—a plethoric, heavy, genial, but somewhat irascible individual, with a very good opinion of himself, but the type does not always breed true, for there are many thin, wizened, little old men who are martyrs to gout.

In taking a general view of the so-called diatheses and their formerly believed heredity one finds that modern discoveries have greatly disturbed the views formerly held as to the influences heredity was supposed to exert in the causation of disease. Tubercle, leprosy, malaria, and I think I may say rheumatic fever, are all infective diseases the micro-organisms of which are recognised. Syphilis when active may be transmitted to the second generation, but there its influence as such probably ceases. Rickets and gout, the two dietetic diseases, appear to exert a stronger influence and to carry their effects further. Gout with its sodium biurate deposit is the sole survivor of the chemical theory of disease. But there may be yet further surprises in store for us. It may be that this is not a mere crystallising out of a supersaturated solution of the salt from the synovia, for if so all joints ought to suffer alike. Perhaps it may be shown that a particular micro-organism is favoured by the presence of a highly nitrogenous and alcoholic medium and is the cause of the precipitation; and that in rickets the mal-assimilation may favour the growth of another organism the presence or the toxin of which may cause the changes in the bones and epiphyses characteristic of that disease.

I ought perhaps to make a few remarks on cancer which, in spite of the strong evidence of its local origin, many have thought to be a hereditary disease. The late Sir James Paget strongly believed in its hereditary character yet was only able to discover a trace of the family history in one in three of his private patients and in one in five or six among hospital patients. John Birkett always maintained that it was much more common to find cancer commencing in a person who had no family history of cancer than in one who had, and Cripps showed that the proportion of deaths from cancer among parents and grandparents of cancerous patients was scarcely larger than the proportion of deaths from cancer to deaths from all other causes. Evidence seems to be accumulating that we are dealing with a disease that in certain circumstances is contagious and inoculable in the same species. Cancer in mice can be readily inoculated in other mice. It seems certain too that cancer attacks persons living in the same circumstances and in certain houses. I think I can claim to be the first to publish the particulars of three persons unrelated having cancer at the same time, in the same house, in a note to THE LANCET on April 2nd, 1904 (p. 929). A gentleman living in London had rodent ulcer of the face on which I operated several times. His wife had cancer of the breast from which she died some two years after operation and the gentleman's partner who lived in the same house died from cancer of the tongue. I think there is much more evidence of contagion among persons of advanced age and weakened resistance subjected to local irritation than there is evidence of hereditary transmission.

When we pass in review defects of the nervous system we are compelled to admit that a hereditary disposition in these cases is often very strongly marked. In the case of idiots Shuttleworth and Fletcher Beach found in 21·38 per cent. hereditary mental weakness (insanity or imbecility) and in 20 per cent. epilepsy and allied neuroses, and parental intemperance in 16·38 per cent. Whether disuse of the brain in the parents may be regarded as predisposing to idiocy some probably would be inclined to question but the late Langdon Down gives some interesting statistics concerning the children of the three learned professions, law, medicine, and the church. 3 per cent. were the children of lawyers, 4 per cent. the children of medical men, and as many as 18 per cent. the children of clergymen in his asylum for the children of the better classes. He explains this by supposing that for success in law there is required the greatest amount of mental and physical vigour, that in medicine the race is less urgent and the claims not so imperious, whilst in the clerical profession a moderate success is still more insured and there is less claim among the rank and file for great mental and physical exertion. Galton approached this question from the opposite standpoint. He took the members of the councils of the most prominent scientific societies of London and found that the legal profession furnished 11 per cent. of the foremost men of eminence. The medical profession gave origin to 9 per cent. of scientific men, whilst the clergy gave birth to only 6 per cent. of men of science. The gradation, being similar though not the same, renders these two observers' facts taken together extremely suggestive. To turn for a moment to a more inviting subject, that of genius, I think it is generally admitted that Galton in his book on "Hereditary Genius" proved that where a genius had once been developed exceptional ability was apt to be shown by many of his immediate descendants and in some instances for several generations. Havelock Ellis has attempted to show that there is a relation between genius and stature. Taking the average height of these islands as given by the Anthropometric Committee of the British Association as from 5 feet 4 inches to 5 feet 9 inches he proceeded to make a table of all the recognised geniuses and found that 142 were above 5 feet 9 inches, or tall, and 125 below 5 feet 4 inches, or short, and only 74 were between these heights, so that he concluded that genius abhors the middle height.

There are some nervous affections which are very hereditary and are prone to attack individuals of a certain stock at a definite period in their lives as if certain parts of the nervous system owing to some original defect were liable to wear out before the rest. Mr. D. S. Gerrish at the Clifton meeting of this society held in June last related the history of a family in which he had traced through five generations a special paresis always affecting the distribution of the anterior tibial and peroneal nerves, commencing between the ages of 22 and 26, and leading to muscular atrophy. It attacked females as well as males and he had traced it in 16 individuals belonging to this family.

Galton and Karl Pearson have attempted to show that hereditary peculiarities are transmitted in definite proportions so as to be capable of being expressed with mathematical precision. Galton took stature as his standard to work upon, premising that what would be true of one quality, physical or mental, would be true of all. He came to the conclusion that hereditary peculiarities were transmitted in the proportion of one-third to a son, two-thirds to a daughter, two-ninths to a nephew, and one-tenth to a grandson. Pearson working at the resemblance of brothers found that the measure of these, indicated by the well-known regression line, was as 2 to 1—that is to say, that if one of the pair exceeded the mean by a certain amount the other of the pair tended to exceed the mean by half the amount; and similarly in respect of defect from the mean. This was always true for all the physical characters yet worked out in man. He then extended his observations to ability and intelligence and found as the result of many observations made on 1918 pairs of brothers that the index worked out almost precisely the same—i.e., as 2 to 1. He concluded that the psychical characters were inherited precisely as the physical and that though education might aid, it could never create, intelligence—"it must be bred."

Deaf-mutism is a condition which has been supposed to be attributable largely to in-breeding, but the evidence as to this does not appear to be absolutely conclusive.[4] Certain it is that if a deaf-mute has appeared in a family the defect will almost certainly appear in other members of the family, among cousins or indirect descendants. Deaf-mutism probably depends on various defects both structural and nervous which may vary in transmissibility. Edward Cock found absence of semicircular canals, or cochlea, and closure of the fenestra rotunda, reversions to a simple type, whereas others have attributed the defect entirely to nervous lesions. It is often associated with idiocy in Switzerland where in some cantons 1 in 206 is a deaf-mute.

One of the most remarkable of hereditary diseases is hæmophilia which selects only the males on whom to produce its effects, yet it is only transmitted by the females of a family. Nothing apparently seems to be known of the pathology of this peculiar disease, but the mode of transmission is not peculiar to bleeders; for colour-blindness

[4] In-breeding, according to Shuttleworth and Langdon Down, simply causes a concentration of any particular tendency.

almost invariably follows the same law. Earle traced colour-blindness through five generations, and out of eight families there was only one in which the defect was not strictly limited to the male sex, but it was always transmitted by the females; nine-sixteenths of the males were affected but only one-fifteenth of the females.

Polydipsia has been stated by Gee to follow the same law, attacking the males and being transmitted by the females. Of the various congenital defects of the eyes which have been shown to be hereditary, total absence of the iris, coloboma, and irregular pigmentation of the membrane have been noted in successive generations. Amaurosis and congenital cataract, external and internal strabismus, dependent on errors of refraction, are all liable to be transmitted. Nyctalopia, or day-blindness, and hemeralopia, or night-blindness, are both hereditary. Albinoes all more or less suffer from nyctalopia, and hemeralopia has been traced by Cunier through six generations.

If we now proceed to consider external defects and deformities we shall find abundant evidence of hereditary transmission through many generations. Of skin diseases ichthyosis is one of the most remarkable and in the family of the celebrated porcupine man Lambert, who was exhibited at the Royal Society in 1731, the disease affected the males for four generations and two of his descendants were exhibited in 1802. Psoriasis also shows a tendency to become hereditary and Hutchinson has suggested that it may in this way become the parent of ichthyosis. The same peculiarity in transmission, as noted in hæmophilia and colour-blindness, has also in several cases been noted in regard to ichthyosis—namely, that it may attack only the males and be transmitted by the females.

The most remarkable instances of hereditary transmission through many generations are furnished by such deformities as supernumerary fingers and toes and suppression or webbing of digits. In the Guy's Hospital Reports for 1881 I traced through five generations the development of supernumerary fingers and toes. A great-great-grandmother had 80 descendants, of whom 24 individuals, or 30 per cent., were thus affected. Two other deformities were also found in this family—viz., webbing of certain fingers and toes and hare-lip and cleft palate. It would seem that in some cases these supernumerary digits have been reproduced after amputation and even re-developed after a second amputation. I have never met with this experience in my own practice, but Darwin quoted three instances in which it occurred and explained the recurrence as due to "reversion to an enormously remote, lowly organised, and multidigitate progenitor." It is known that the fins of fishes may be reproduced after amputation and the salamander's feet and tail will grow again after removal even to six times. Not less tenacious of reproduction in successive generations is the suppression of certain phalanges resulting in shortening of the fingers or their complete absence. A case is quoted by Sedgewick in which this was traced through the female line for ten generations. Ogle described in 1872 a case in which the first and second fingers and the second and third toes had only two phalanges, whilst the third and fourth fingers and the fourth and fifth toes had each only one phalanx. He traced this defect through three generations and through collaterals living in distant places, at Manchester and Lincoln. Tubby has published particulars of a family in which the feet were like lobster claws, the three central toes being suppressed, whilst the hands had each only one finger, the fifth. He traced this deformity through four generations and, in spite of the admixture of new blood, 15 out of 22 descendants were deformed. Many other defects and deformities which are hereditary I have only time to mention. Congenital dislocation of the hip has been transmitted through four generations. Absence of the patella has been noted in three successive generations. Webbing of the toes and fingers has been traced through three and four generations. Club-foot is often hereditary; so are hare-lip and cleft palate. In respect of this deformity it is interesting to note how a slight defect in one generation may foreshadow a more serious abnormality in a succeeding generation.

In the Transactions of the Clinical Society for 1888 will be found a paper in which I showed that a congenital absence of the lateral incisor tooth was an indication that a hare-lip or cleft palate in the same plane might follow in a successive generation. I now for the first time make public a further observation in relation to this deformity. It is that a feebly developed lateral incisor on one side in the mother may foreshadow a hare-lip and cleft palate in her offspring. I have twice noted this association and I exhibit to the society a photograph and drawing of the teeth of a mother, showing this defective lateral incisor, whose first and only child has hare-lip. Hare-lip and cleft palate are frequently associated with other deformities which apparently present no causative relation. I mentioned that in the family with supernumerary fingers and toes which I recorded hare-lip and cleft palate had also appeared in the later generations. Roux has recorded a similar association. Cooper Forster recorded particulars of a family in which imperforate anus was associated in several instances with hare-lip and cleft palate.

Our Transactions already contain several instances of multiple congenital deformities. In the first volume Carpenter relates the histories of two sisters who presented many abnormalities and were of weak mental capacity. Each had a keel-shaped skull, congenital heart disease, abdominal ruptures, webbed fingers, and six toes on each foot. Jackson Clarke describes a case of absence of the radius causing club-hand associated with macrostoma. In the second volume Hutchison and Sutherland each relate a case of multiple deformities of almost identical characters. Two boys, one aged 13 months and the other two years, presented the following abnormalities in common: (1) congenital heart disease; (2) rudimentary hare-lip; (3) six digits on each hand; (4) shortening of all the long bones of the extremities; and (5) defective development of the gums. The shortening of the limbs and the spreading of the fingers and toes resembled cases described as achondroplasia, but other defects were superadded and Shuttleworth thought that their intellects were defective. In the third volume Lewis Marshall gives particulars of a family at Nottingham in which truncated fingers and toes had occurred for five generations and in some of those affected double or supernumerary thumbs had been noticed. This family defect so closely resembles that described by Ogle in 1872 that one is almost inclined to think that some of the same family which Ogle found in London, Manchester, and Lincoln had found their way to Nottingham. I have not time more than to mention the tendency of partial hypospadias to be reproduced or exaggerated in succeeding generations. Hernia, varicocele, and varicose veins are often found hereditary, so is atrophy of one testis.

I wish now to make a few remarks on constrictions and so-called intra-uterine amputations, as they probably are closely related in cause and effect. The remarkable case shown at the Clifton meeting of this society by Mr. H. E. Harris, in which there were complete absence of both lower limbs and of the left upper extremity and webbed fingers on the hand of the only limb remaining, will sufficiently illustrate intra-uterine amputations; and the no less remarkable case of deep encircling constriction of the abdomen associated with a depressed furrow above the left knee published by Dr. C. O. Hawthorne in the third volume of our reports and in THE LANCET,[1] and another shown by Mr. H. J. Curtis of multiple dimpling and grooving of the surface associated with club-feet will illustrate the simpler condition. The most generally received explanation of those constrictions and amputations is that they are caused by the umbilical cord. I am inclined to think that there is little more to be said in favour of the constricting funis theory of intra-uterine amputation than there is for maternal impressions which I will not waste the time of the society by arguing against. If the funis were so tightly wound round a limb as to cause amputation surely the counter pressure on the cord itself would stop the whole fœtal circulation and kill the fœtus. Again, if the funis ever causes amputation, considering the extreme frequency with which it is found round the neck of the newly born child amputation of the head would be one of the most common of the intra-uterine amputations. Then taking Harris's case, is it likely that a cord could first amputate both lower extremities at the hip-joint and then proceed to amputate one upper extremity at the shoulder-joint? The number and the level of these three amputations completely dispose of the theory. If the funis amputated one it would thereby be so relaxed as to lose its constricting influence on the others. Even supposing it possible, the webbed fingers on the only limb still remain to be explained. Then what of the

[1] THE LANCET, August 8th, 1903, p. 374.

amputated fingers and toes? Will the funis in any way account for the loss of eight fingers and eight toes? Or, could it pick out the three central toes and take off the thumb and three first fingers of each hand as in Tubby's case? Hawthorne's constricting abdominal cicatrix at first sight looks very like something that might be caused by the cord but on closer examination it is seen that the constriction is below the level of the umbilicus and does not run up to it as one would expect if caused by the funis. The grooving of the thigh and the double grooving over the loins to me suggest the probability of a general condition rather than the mechanical effect of the cord. Curtis's case is accounted for on the additional theory of amniotic adhesions of which there is no evidence. The multiple dimplings and grooves are probably to be accounted for by errors in development similar to those which caused the clubbed feet, present in that case.

I do not wish to argue longer in the negative. What theories can be put forward to explain these deformities which commence in a family and then cling tenaciously to subsequent offspring in spite of fresh blood being added at every generation? They seem to suggest a defect very far back in the procreative process and the frequency of many associated defects implies something very general. An incompatibility of germ and sperm cell, such as produces hybrid deformities in plants, appears to me a not unreasonable hypothesis as the cause of defects dating back to the earliest stage in development.

Next to this, considering the vast number of deformities which are associated with defects in the nervous system, as in many of the cases I have mentioned in illustration, a defective nerve control will be a sufficient explanation of many defects occurring at a later period. Morphœa or scleroderma is often symmetrical and by many is thought to be governed by nervous distribution. Such a condition, to my mind, offers a better explanation of intra-uterine amputations than any mechanical one of the cord. There is yet another way in which suppression of an extremity might be accounted for—that is, by supposing a cutting off of the blood-supply through an endarteritis similar to the endocarditis which often closes the pulmonary orifice and is the cause of congenital heart disease, or plugging of the main artery by embolus, but this would scarcely alone account for the associated deformities such as webbed fingers and the like.

The most difficult of all deformities to account for are those in which there is an excess of the normal development, as with supernumerary digits, if Darwin's reversion theory be not accepted, but the frequent association of these with lack of completion in other parts indicates a general failure of control in the developmental process. Many defects, such as hypospadias, imperforate anus, and cleft palate and hare-lip, are due to a failure to complete the normal process, which a lack of nourishment may to some extent account for. This was almost proved to be the cause of the lion cubs in the Zoological Gardens being born with cleft palates, for with a more liberal and appropriate diet cubs were born normal. But what it is very important to bear in mind is that a defect in development once established is very difficult to eradicate from succeeding generations. What may be called the *tyranny of the ancestor* then comes into operation, in spite of every desire to escape from his vicious and invisible influence. Happily the other side of the problem seems equally true—that a vigorous and manly constitution with high intellectual qualities may be transmitted if the parents do not transgress the laws of mental, moral, and physical hygiene. Physical deterioration, with which mental degeneration almost certainly becomes associated, rests on two factors; the defective health of the parents and the unhealthy surroundings and deficient food of the offspring. Of these two factors the parents exert the greater influence, because in them is summed up not only the result of their own unhealthy lives but that of their ancestors. Much, no doubt, can be done for the child by good food, good air, and mental and moral training, but he must carry the *tyranny of his type* to the end of his days. The Shetland pony, stunted by centuries of bad feeding, cannot in a generation be converted into either a race horse for speed or into a shire horse for draught. The regeneration will be gradual however desirous we may be to hasten it. But to the two ends indicated—to inculcate the laws of health among parents and to secure good food, air, and mental and physical training for the child—to these ends philanthropy may well be directed.

The Croonian Lectures

ON

BRIGHT'S DISEASE AND ITS VARIETIES

Delivered before the Royal College of Physicians of London on June 7th, 9th, 14th, and 16th, 1904,

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LECTURE III.[1]

Delivered on June 14th.

NEPHRITIS AND ACUTE BRIGHT'S DISEASE.

MR. PRESIDENT AND GENTLEMEN,—It will be seen from the consideration of the facts brought forward in the second lecture that the tendency of recent experimental work is to enlarge considerably the range of action of renal poisons and to suggest that nephritis and Bright's disease are probably in the great bulk of instances of toxic origin, although it must be admitted that at the present time there is no very definite evidence in all instances as to the nature of the toxic agent.

We are, perhaps, justified in considering that the toxic substance producing renal disease in the human subject may be divided more or less arbitrarily into three groups. The first, and on the whole perhaps the most important, consists of the toxic substances which are presumably formed in the course of febrile illnesses and more especially in acute specific diseases. Secondly, the toxic substances ingested, of which the most notable instances are, on the one hand, alcohol and, on the other hand, lead. Thirdly, it is possible that substances having a deleterious action on the kidney may be produced as a result of altered metabolism. The poison of gout is, of course, the most marked instance of this although it is difficult to be certain as to this since it is quite possible that the renal changes in this disease may really be dependent on the action of some poison that is ingested.

The relation of nephritis to acute infective diseases is so well known that only some of the points of interest need be touched upon. It would seem that the severity of the renal lesion is not in any way necessarily related to the severity of the specific infection and this is especially seen in the case of scarlet fever, where the most severe nephritis may occasionally follow an attack of scarlet fever so slight as to have been scarcely recognisable. This fact, which is well recognised as regards scarlatinal nephritis, is also to be seen in the case of other forms of infective disease and it is especially important to recognise it in the case of syphilis. Nephritis owing its origin to syphilitic infection is probably more common than is usually supposed and certainly some of the most severe forms of the disease may occur in cases where the syphilitic manifestations have not been unduly severe. Personally I think it is probable that some forms of so-called idiopathic Bright's disease or nephritis frequently attributed to the action of cold are really dependent on the action of syphilis. It is not uncommon to see well-marked Bright's disease in the first two years after syphilitic infection where the real etiology of the disease may perhaps be discovered quite accidentally, possibly owing to the occurrence of a syphilitic rash slight in amount. Syphilitic nephritis presents in some respects peculiar features and will be considered more in detail later. The only point I wish to insist upon at present is that the virus of this disease, just like that of other acute specific diseases, is capable of producing a profound nephritis characterised amongst other things by a very profuse albuminuria and in my opinion this malady accounts for some of the cases of Bright's disease seen in young adults and attributed to cold owing to the absence of a history of the occurrence of the more usual acute specific infections giving rise to nephritis. Although the action of toxic agents whether ingested or produced

[1] Lectures I. and II. were published in THE LANCET of July 16th (p. 125) and 23rd (p. 191), 1904, respectively.

through the agency of acute specific infections is probably the most important cause of nephritis and Bright's disease there are in addition various other subsidiary causes which may be of interest and of importance. Thus age and sex play a part, the disease being one more prevalent in the young and in the male. But here it is difficult to appreciate accurately how much is dependent on real sexual differences and how much on sex affording a greater opportunity for the action of these poisons, as, for instance, in the cases of lead, syphilis, and alcohol. As regards age, however, there can be little doubt that the form assumed by the renal disease is to a considerable extent influenced by age and it may be said, speaking broadly, that some of the most severe forms of true Bright's disease are essential diseases seen in the young. Another subsidiary cause or influence that is occasionally seen is the occurrence of the disease in several members of the same family and the disease has even been observed affecting several members of the same family in childhood. Instances have been quoted where several children have suffered with granular kidney and it has been suggested that in some of these the malady may really be due to a specific taint. One of the most interesting conditions associated with Bright's disease is the fact that this malady not uncommonly affects kidneys which are congenitally malformed. Several instances of this have fallen under my observation. This, although of no clinical importance, is of some pathological interest.

One of the principal problems in connexion with this subject is the differentiation of the different forms of nephritis and of Bright's disease. Many writers look upon nephritis and Bright's disease as more or less synonymous terms and not a few advocate the giving up of the term Bright's disease and suggest that all forms of so-called inflammatory renal disease should be classified under the term of nephritis, the various forms of the affection receiving other clinical names, such as acute or chronic, or else pathological designations, such as tubular or interstitial. The term Bright's disease was applied, of course, in recognition of Bright's great discovery that certain forms of albuminuria associated with dropsy were accompanied by gross structural lesions in the kidney and if his name be applied to all the conditions in which albuminuria, dropsy, and gross structural lesions are found the number of diseases which must be included under the term of Bright's disease is necessarily very considerable. It would include, not only various forms of what are spoken of by many pathologists as acute and chronic nephritis, but it would also include such conditions as waxy degeneration, the true granular kidney, and might even be stretched to include such conditions as the cystic kidney or the congenital cystic kidney. It is obviously inconvenient to include such widely different pathological processes as those producing the so-called large white kidney and those producing a red granular kidney and the amyloid or cystic kidney all under one term of Bright's disease. This is inconvenient, not only owing to the difference in the etiology of the conditions, but really much more so owing to the profound difference in the clinical course of the different maladies and it renders all progress in attempting to associate given symptoms with certain lesions very difficult. On the other hand, to give up the term of Bright's disease and simply to speak of its various forms as some one or other variety of nephritis, acute, chronic, tubular, interstitial, &c., is similarly inconvenient owing to the profound differences which exist between the different forms of acute nephritis.

It matters little what names we apply to these conditions provided we recognise that there are a great number of different lesions with a more or less distinct group of symptoms and a distinct natural history, but to group all these different inflammatory affections of the kidney under the term nephritis is to produce as much confusion as that existing at the present time owing to the tendency of many writers to talk of all kidneys as granular kidneys the surface of which presents a granular appearance. No doubt in one sense these kidneys are granular, but to include in one group the roughly granular kidney seen in the young adult where the kidney is small, mottled, or even white, the urine abundant and loaded with albumin, with that seen in a middle-aged or elderly man where the kidney is red, finely granular, often associated with profound arterial lesions and where the albuminuria is slight or even absent produces only confusion. It is doubtless difficult and perhaps impossible to draw a hard-and-fast line between nephritis and Bright's disease, although it is not difficult to separate the more extreme varieties of these affections. At first sight it might seem that the severity of the effects produced by the lesion might be used as a criterion of distinction, using the term nephritis for the more trivial acute affections and the term acute Bright's disease for the more severe. This, however, is unsound from a pathological point of view and also from a clinical standpoint, inasmuch as cases of extreme severity and even causing death may be included under the description of nephritis rather than of Bright's disease, as some of the more conspicuous symptoms of the latter illness may be absent.

The term Bright's disease, as stated above, was originally employed to characterise a condition in which urinary and renal changes were associated with the presence of dropsy and it would seem on the whole, although not an irreproachable classification, that the most satisfactory way out of the difficulty would be to restrict the term nephritis to certain conditions running an acute course in which although renal lesions and urinary changes are present yet dropsy is absent. Doubtless a very considerable number of different renal lesions of varying degrees of severity would be included under this one common heading, but this is more or less inevitable whatever system of classification is adopted. The term acute Bright's disease might on the other hand be applied to the condition where along with renal and urinary changes dropsy is present. As long as one's attention is restricted to the consideration of acute renal lesions this classification is on the whole satisfactory, as every physician must recognise that there are, broadly speaking, two groups of cases of acute inflammatory affections of the kidney, one where all the physical signs and symptoms are, so to say, urinary and the disease reveals itself merely by an alteration in the nature of the urine, and the other where along with the urinary changes dropsy is present.

It has been argued, and may doubtless still be argued, that the separation into these two groups is more or less artificial, inasmuch as the etiology is very often if not identical at any rate similar; and many writers, if not most, dealing with the subject, although recognising the two conditions, have looked upon the one as merely a more serious or extensive or advanced form of the other. In other words, they have recognised that nephritis may be, so to say, of slight severity and unaccompanied with such a phenomenon as dropsy, or, on the other hand, that it may be severe and dropsy a marked feature. Some authors have been so influenced by this consideration as to be inclined to drop the term acute Bright's disease and to speak of all those acute renal affections as acute nephritis, retaining the word Bright's disease as a distinctive term for certain forms of so-called chronic nephritis. It is probably, as I have already mentioned, of but little importance what names we give to these conditions provided that we recognise the existence of these two definite forms of disease.

Many writers, as I have just stated, look upon the form of nephritis accompanied by dropsy as merely a more serious variety of acute nephritis. This, however, is a view which cannot be accepted either on experimental or on clinical grounds. It is doubtless true that where dropsy occurs as an accompaniment of acute renal inflammation the quantity of urine is greatly diminished, but neither experimental pathology nor clinical medicine affords any support to the view that the occurrence of the dropsy is dependent merely on the diminution in the renal secretion. The renal function may be suppressed experimentally, as we have seen, by removal of the kidneys, by ligature of the renal arteries, by ligature of the ureters, or by injection of toxic agents causing destruction of the renal tissues. In none of these conditions, although the flow of urine is necessarily completely arrested, does dropsy occur. These results are cogent enough, but still more conclusive evidence pointing in the same direction may be obtained by the study of the results of disease clinically. There are a number of conditions in which life may be maintained for a week or ten days, notwithstanding the complete suppression of urine. In none of these is dropsy a marked phenomenon; in most of them it does not occur at all, and where it does occur it is quite different from the dropsy with which we are familiar at the onset of acute Bright's disease. In acute Bright's disease dropsy may be the first sign and it is always an early one. In complete suppression of urine dependent on calculous obstruction life may be maintained for some ten days and dropsy may be completely absent or at the most in a few rare instances slight pitting has been observed towards the end. This

affords a great contrast to the rapid anasarca that develops at the onset of acute Bright's disease and may almost in a few hours, or at any rate in a few days, render a patient unrecognisable. In a number of other conditions—as, for instance, thrombosis of the renal arteries or complete suppression of urine from reflex causes—dropsy is similarly absent notwithstanding that life may be prolonged for a period similar to that seen in calculous obstruction.

The consideration of the urinary changes produced in these diseases will, at any rate, show that the occurrence of dropsy cannot be correlated to the mere suppression of the urinary function. But much stronger evidence than this is obtained from the study of other renal diseases. Thus, in the latter stages of congenital cystic kidney it is no uncommon thing for the flow of urine to be diminished very greatly, although perhaps complete suppression is not usual. Yet even in this malady dropsy at all resembling that seen in acute Bright's disease may be said to be unknown, although it is true that in a few isolated instances slight pitting of the skin has been observed.

The most conclusive reason, in my opinion, for separating cases of acute Bright's disease from cases of acute nephritis rests in the fact that the occurrence of dropsy even in this disease cannot be correlated with the severity of the inflammatory change in the kidney. It is doubtless true that most cases of nephritis occurring during the course of, or as a sequel to, an acute specific infection where dropsy is absent are slight as shown by the alterations in the composition of the urine, yet it is absolutely certain that the most intense nephritis may exist without the occurrence of dropsy. Thus the urine may be greatly diminished in amount, loaded with albumin, and loaded with blood, presenting therefore all the pictures of an intense acute nephritis, as severe as any seen in acute Bright's disease, and yet dropsy may be absent. We may even go further than this, inasmuch as cases of acute inflammation of the kidney may be seen where after a short period during which the urine is loaded with blood and albumin the secretion becomes more and more scanty and finally suppressed and the patient dies with uræmic manifestations and yet dropsy may be absent. We see from the consideration of these facts that neither from the experimental nor from the clinical side is there any substantial evidence that the occurrence of dropsy is to be looked upon as dependent on a mere suppression of the urinary excretion. Further, what is more important from our present point of view, acute inflammatory affections of the kidney of the highest degree of severity may exist without the occurrence of dropsy, although even in the fatal cases the duration of life is such that it cannot be asserted that the patients have died too soon for the dropsy to manifest itself. One of the specimens of acute nephritis on the table is that of a patient who lived ten days after the onset of symptoms and where complete suppression may be said to have been present, as less than ten ounces of urine were passed during the whole of this period, yet dropsy was absent notwithstanding the intense character of the nephritis. I think the conclusion is justified that the occurrence of dropsy cannot be correlated either with the mere suppression of the urinary excretion or with the virulence of the inflammatory changes in the kidney.

When we turn to the consideration of the cases of acute Bright's disease—that is to say, the cases of acute inflammatory renal changes associated with the presence of dropsy—we meet with facts which bear out the same conclusion, as it is quite common to see cases of acute Bright's disease where the dropsy and the general effects produced by the malady may reach a high degree of severity and yet the urinary changes, although well marked and acute, are not necessarily as severe, as measured by the amount of blood and the amount of albumin or even the diminution in the amount of urine, as those seen in the more severe forms of nephritis unaccompanied by dropsy.

We have hitherto been considering clinical facts and probably the only difference of opinion amongst different observers would be as to the names to be applied to these two conditions. When, however, we attempt to explain the differences between these two great groups of cases we are dealing mainly, at any rate, with theory, but that there are two great groups of acute inflammatory affections of the kidney, one associated with dropsy and one without, must be, I think, regarded as proved. We cannot for the reasons advanced above look upon the one as merely a more serious form or development of the other. What is the explanation of the occurrence of dropsy in the one group and its absence in the other? We have seen that it cannot be due to the mere suppression or diminution in the urinary flow and it might be quite legitimate to regard the diminution in the urinary flow as rather the result of the dropsy than its cause; since undoubtedly under certain conditions very acute nephritis may exist without any diminution in the urinary flow. Thus acute nephritis may occur as a complication of diabetes and the urine be loaded with albumin and blood and the kidney present the changes characteristic of acute nephritis, and yet the flow of urine may be maintained at the high level characteristic of diabetes. This is certainly remarkable as showing that an intensely inflamed kidney may yet be able to excrete very large quantities of urine and makes one hesitate as regards always attributing the diminution in the flow of urine seen in acute Bright's disease to the changes in the kidney. On the other hand it is, of course, undoubted, as acute nephritis shows, that usually acute inflammation of the kidney does cause a diminution in the flow of urine. A tempting hypothesis is, of course, the well-known one that in Bright's disease we have to deal with a toxic substance circulating in the blood and that this produces not only changes in the kidney but also changes in the vessels at large allowing of the production of dropsy, and it would seem at the present time that the most plausible, although by no means proved, view would be that in nephritis we have to deal with a renal poison pure and simple, but in that form of acute nephritis associated with dropsy to which the term acute Bright's disease is applicable a different poison is present affecting not only the kidney but the vessels generally. There is unfortunately no direct evidence in support of such a view as this, although there are a number of substances the injection of which may be followed by the production of dropsy. These so-called lymphagogues show, at any rate, that dropsy may be produced as a result of the presence of abnormal substances in the blood. Still, no such substance has as yet been obtained from the blood, the tissues, or the urine in Bright's disease. Although the mere arrest or diminution in the urinary excretion is not of itself capable of producing dropsy, yet it is probable that the hydræmic condition brought about as a result of partial or complete suppression of urinary secretion may play a part in the production of dropsy and there is a certain amount of experimental evidence in support of this.

Ligature of the ureters in animals, as has been stated already more than once, is not followed by the production of any dropsy. Further, the injection of considerable quantities of normal saline solution into the general blood stream, although producing a condition of hydræmia, is also not followed by the production of any dropsy. If, however, these two procedures are carried out in the same animal ascites is liable to be produced. The most marked ascites is produced if after ligature of the ureters through a small incision in the abdominal wall a moderate venesection is made and this is followed by the transfusion of normal saline solution. A condition of hydræmic plethora may be produced in this way and it would seem that either the peritoneal vessels are normally more permeable than those of other parts of the body or possibly that the condition of the peritoneal vessels has been modified in some obscure way as a result of the operative procedures necessary in order to ligature the ureters. It has not been possible, however, in the laboratory to reproduce anything comparable to general renal dropsy such as is seen clinically in cases of acute Bright's disease.

Notwithstanding the separation of these cases of inflammation of the kidney accompanied by general dropsy from those where the inflammatory lesion produces only effects in the composition of the urine, the number of cases included in the latter group is still very large, and such cases present all degrees of severity from a mere passing or transitory albuminuria to those where complete suppression of urine is followed by death from uræmia. It is difficult, if not impossible, to classify these various forms of nephritis in a satisfactory manner, but at any rate one group is more or less sharply separated from the others. This is the group where the nephritis occurs during the course of acute febrile diseases and corresponds to what used to be spoken of as febrile albuminuria, but perhaps the name given by French authors to this condition—viz., of transitory nephritis—is more satisfactory. The main points of interest attached to this condition are, first, that it is not in

any way one immediately serious although it frequently occurs as a complication in the very same acute specific diseases—such as scarlet fever, pneumonia, &c.—which may give rise to the more serious forms of acute nephritis or even to acute Bright's disease. Secondly, the condition is a purely temporary one seen during the height of the febrile disorder and subsiding with it and presumably dependent on the action on the kidney of the toxic agents or toxins elaborated by the morbid process causing the original disease. Further, in many instances the lesions produced in the kidney are not uniform in their distribution but, on the contrary, are disseminated and patchy and therefore partial in their distribution. The degree of development of this transitory nephritis varies enormously in different acute febrile diseases and even in the same disease in different circumstances and unquestionably it is a condition of little or no clinical importance at the moment and, as just stated, it commonly subsides with the subsidence of the febrile disorder. One of the great difficulties as regards the pathology of the serious chronic forms of Bright's disease lies in the fact as to whether this transitory nephritis may or may not lay the foundation of a subsequent progressive lesion of the kidneys. Such an origin certainly cannot be excluded, as it is no uncommon thing to see patients with the most advanced chronic Bright's disease which has run a latent course for many years and the etiology of which is most obscure, and it is, of course, possible that some of these cases may really owe their origin to an attack of nephritis accompanying an acute specific which has produced renal changes and has either been entirely overlooked or else forgotten by the patient.

Another point of interest with reference to these cases of slight nephritis occurring as the accompaniment of acute febrile diseases is the question whether some of the cases of trivial or even of so-called functional albuminuria may not really be due to a slight lesion produced in the kidney by some such inflammatory affection, although other factors must also be at work and the most important of these is probably a functional disturbance of the vaso-motor system. In transitory nephritis or febrile albuminuria the lesion in the kidney is not only slight but, as already mentioned, may be partial in its distribution. It is, at any rate, conceivable that in such cases the glomeruli or the tubules may in some portions of the kidney be sufficiently damaged to allow of the passage of albumin permanently and I cannot help thinking that in some of the cases of slight albuminuria where there is no reason to suppose the presence of a granular kidney some such mechanism as this is at work. In other words, the albuminuria although persistent may not be the sign of a chronic and progressive disease but the relic, so to say, of a former attack of acute nephritis of slight severity, partial in its distribution and of no great clinical importance. We are rather prone to look upon persistent albuminuria as a sign of chronic progressive disease and yet large numbers of patients may suffer from albuminuria for long periods without any very noticeable impairment of their general health. It is possible that in these cases the albuminuria is to be attributed rather to a partial and non-progressive lesion. A similar lesion may, perhaps, also be the cause of some of the so-called functional albuminuria. Although transitory nephritis is more or less sharply marked off from the other varieties the latter are very difficult to classify, inasmuch as all grades of severity are seen. They may, of course, be divided up into glomerular, tubular, and interstitial according to the predominance of the lesion in one or another of these structures, or, on the other hand, they may be classified etiologically according to the agent causing them. Some of the varieties, as for instance that seen perhaps as a result of influenza, are remarkable owing to the amount of hæmaturia which may be present; others, as in scarlet fever, are characterised by the very great diminution in the amount of urine excreted and it is no uncommon phenomenon for complete suppression to occur. In the severe forms associated with more or less complete suppression uræmic phenomena are always prominent and they usually take the form of the more acute manifestations of uræmia, such as vomiting, drowsiness, coma, and convulsions. Epileptiform seizures are probably more frequently seen in the uræmia accompanying severe and fatal acute nephritis than in that seen in the other forms of renal disease with, of course, the exception of eclampsia. The frequency of epileptiform seizures in severe nephritis may perhaps be due to the variety of the disease or nature of the poison, but, on the other hand, it must not be forgotten that many of these cases occur in children and such young patients of course are more liable to epileptiform seizures in a variety of circumstances than adults.

Although the uræmic symptoms seen in acute nephritis are most frequently of the acute or even of the fulminating order, in exceptional instances a clinical picture resembling that of latent uræmia may be seen. A most remarkable instance of this is afforded by the case where acute interstitial nephritis of unknown origin occurred in a girl aged 11 years, causing complete suppression, and where the symptoms presented were practically indistinguishable from those seen in complete calculous anuria. The lesion in this case, although annulling the functions of the kidney, was really an acute interstitial nephritis, the interstitial tissue being gorged with blood and containing innumerable disseminated foci of commencing suppuration. This patient, as already mentioned, lived ten days from the onset of symptoms and during that time passed less than ten ounces of urine. It is possible that the difference in the character of the uræmic symptoms from that most usually seen in acute nephritis is dependent on the lesion being one affecting the interstitial tissue and this case affords further support to the view already advanced that where the excretory functions of the kidney are suddenly arrested, the kidney having been previously healthy, the uræmia produced is of the character known as latent uræmia and that it is only where uræmia supervenes as a result of acute or chronic disease of the renal elements themselves that the more usual acute or chronic uræmia is seen. This is a point of considerable importance to the surgeon especially, inasmuch as there is a tendency to associate the clinical picture of latent uræmia exclusively with obstructive suppression, but it is unquestionable that precisely the same symptoms may be produced where the functions of the kidney are arrested owing to acute disease of the kidney.

It is probable that syphilis plays a considerable part in the production of nephritis and it would also seem that in some instances the nephritis presents peculiar features, thanks to which the probability of it being of specific origin can be surmised. Syphilis differs from other acute specific infections in that it causes a greater variety of lesions in the kidney. Thus it has long been recognised that gummata and waxy degeneration of the organ are liable to occur during the later stages of syphilitic infection. But putting all such cases aside there can be little doubt that a syphilitic nephritis occurs not infrequently in the first two years following specific infection. Patoir[2] showed that the examination of the urine at the onset of secondary symptoms in syphilis revealed the presence of albumin. This albuminuria resembled in many respects that seen in the course of other infective diseases. Very commonly no other symptoms of nephritis were present and the amount of albumin was small. This author considers that in syphilis the urinary secretion tends to become more active and that the quantity and the density of the urine may increase but curiously enough at the moment of the outbreak of the syphilitic manifestations the toxicity of the urine may be diminished and he thinks that in young subjects there is, at any rate, an increased activity of nutrition and that the changes in the urine are mainly dependent on this. In addition to these more or less trivial disturbances in the function of the kidney cases are seen where nephritis of a considerable degree of severity occurred during the incidence or during the convalescence of syphilis. Cases of nephritis are not infrequently seen occurring during the secondary stage of syphilis which are often attributed to the action of cold. It was at one time thought that these more severe cases of nephritis seen during the course of syphilis were really dependent on the large doses of mercury that had been employed in the treatment. But this is not the case, as several instances have been recorded where the nephritis has supervened in patients who have not been systematically treated with mercury.

Delamare[3] considers that where nephritis complicates secondary syphilis the renal lesion is either acute or subacute and there is a certain resemblance between the nephritis of syphilis and that seen complicating scarlet fever. Two cases of syphilitic nephritis have fallen under my observation, one in a young man and the other in a middle-aged woman. In both cases the renal lesion developed during the first year following infection and in both cases it was of a severe form.

Syphilitic nephritis is difficult to distinguish from other

[2] Patoir: Archives Générales de Médecine, 1901, p. 385.
[3] Gazette des Hôpitaux, 1900.

forms of nephritis, but there are one or two features as to the clinical course of the disease which may suggest its origin apart from the history of recent infection. In the first place, the amount of albumin present in the urine is usually very large, the urine becoming solid on boiling. Notwithstanding the very large amount of albumin present the quantity of urine is not so much diminished as in many other forms of nephritis. In the instances which have fallen under my own observation blood has been absent. Notwithstanding the very large amount of albumin casts are not very abundant and casts consisting of definite renal elements are extraordinarily scanty. The patient often does not present any marked phenomena of illness or any marked physical signs other than the presence of a large amount of albumin. Thus dropsy may be completely absent. Delamare has drawn attention to the fact that one of the characteristic features of the condition is that a milk diet produces very little improvement and no material diminution in the amount of albumin. The albuminuria often persists for many months and in one of the cases under my own observation it lasted for over six months but ultimately cleared up absolutely. In other cases uræmic symptoms developed and these are necessarily of a more severe type and may be fatal. In one case that I have seen death occurred not so much from uræmia as from cardiac dilatation. Dropsy is not always absent but where it is present the cases are more or less indistinguishable clinically from other forms of acute or subacute Bright's disease. The prognosis of syphilitic nephritis is most uncertain but it would seem that, notwithstanding certain theoretical objections, the treatment of these cases by antisyphilitic remedies is necessary and that mercury should not be withheld owing to any fear of the toxic action of the substance on the kidney. In some respects the clinical picture produced by syphilitic nephritis is somewhat similar to that seen in amyloid disease, and of course this affection is not an uncommon accompaniment or sequel of syphilitic infection. Still, the differential diagnosis can usually be made owing to the different period in the course of syphilis in which syphilitic nephritis and amyloid degeneration are respectively liable to occur. It is important to recognise syphilitic nephritis, as very considerable benefit may often be derived from its early recognition and prompt treatment with antisyphilitic remedies.

THE RED LIGHT TREATMENT OF SMALL-POX.

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THE treatment of small-pox by red light was recommended to the profession some 12 years ago by Dr. Finsen of Copenhagen. Since that time it has been tried in several places and has, we believe, come into general use in the Scandinavian countries. In this country, however, the treatment has not become established. In the course of last year we had an opportunity of testing its value and we were not favourably impressed by it. We think it worth while to publish our results to justify the apparent neglect of a remedy reputed to be of so much value.

In a recent article[1] Dr. Finsen has expressed his views in very emphatic language and there and elsewhere has laid down very clearly and definitely what his remedy is claimed to accomplish. It is not a remedy for small-pox but only for the suppuration which attends it. And Dr. Finsen does not claim that its effect is merely to ameliorate the suppurative condition and its consequences, but that it absolutely prevents it. He says: "Suppuration will generally not occur and the patients will recover without scars or only with almost invisible cicatrices."[2] "That suppuration is due to light, especially to the blue violet and ultra-violet rays, and may with certainty be avoided if these rays are kept off ..... rests on a fact established by practical experience."[3] "It may be considered as an irrefutable fact that ..... it is possible to avoid the suppuration and its consequences by protecting the patients from the action of light."[4] "The greatest number of deaths are due to suppuration which, *ceteris paribus*, would be prevented if no suppuration were present. Further, the numerous complications and sequelæ due to suppuration may be avoided as well as the disfiguring pitting."[5] "Even in cases of confluent small-pox or in unvaccinated persons the method very rarely fails, supposing, of course, that the patient comes under treatment early enough."[6] There is a suspicious moderation about the last statement. Truly, if the remedy fails in confluent small-pox or in unvaccinated persons we shall be better off without it. We have not, however, so limited our selection and we think that we are entitled to hold that if in a reasonable number of cases in which the necessary conditions have been fulfilled suppuration and its consequences are shown to be the rule the case for red light, so stated, falls to the ground.

Our experience was limited to 13 cases. As we were convinced that these patients derived no benefit from the treatment we did not, for reasons which will appear later, consider that we were justified in proceeding further. The ward in which they were treated was a small one containing four beds. It had six windows, all of which were blocked by a double layer of photographic "ruby" fabric. There were two doors, over each of which was hung a curtain made of a double thickness of red "Turkey twill." The doors opened into lobbies and an area round each door was screened off with a double thickness of the same material, so that on passing through the door and under the door curtain one found oneself in a small chamber completely shut in with red curtains. One passed again through a second curtain to reach the light. The effect of this arrangement was that persons entering or leaving the ward admitted no white light when raising the curtains. A few other apertures in the ward through which a dim light penetrated were also screened off with ruby fabric. In fact, the ward was converted into a photographic dark-room and perhaps we used an excess of caution in our arrangements. No candles or naked flames were used at night. Artificial light was obtained by the use of dark-room lamps with red glass.

Fifteen patients were at different times admitted to the ward. One of these had an attack of discrete small-pox of the mildest description and was, in fact, taken to the ward by inadvertence. Another patient died from heart failure the day following his admission, for which reason his case also may be excluded. There remain 13 cases in which the patient was treated in red light throughout the period of suppuration. Five were vaccinated, six were unvaccinated, one patient had been vaccinated only in the period of incubation, and in one case the matter was doubtful. Four were cases of discrete and nine of confluent small-pox. The mildest was one of discrete small-pox of a very moderate type of severity and at the other extreme was one of very severe confluent small-pox. The other cases ranged between these two extremes. Two of the patients died, both during the fever of suppuration. In neither case was there any complication to which the fatal result could be attributed. Details of the cases are given in the table.

Suppuration.—What precisely is to be understood by the statement that suppuration is prevented by the red light treatment? For the statement may imply either of two very different trains of events. It may mean that the vesicles, even in cases of unmodified small-pox, fail to maturate. Or it may mean that as the result of the treatment cases of unmodified small-pox do not occur but are resolved into cases of modified small-pox where suppuration is at a minimum. The fact that suppuration is imperfect is by no means the only peculiarity of modified small-pox. If suppuration is imperfect so is vesiculation and so may be the formation of papules. The essence of the thing is that an idiosyncrasy of the individual (sometimes natural, more often acquired) so increases the capacity to resist the action of the virus in the skin that processes of repair predominate over processes of destruction. In consequence there is a change in the whole course of development of the lesions which differ in their size, shape, and rapidity of development and not merely in the fact that suppuration is less in evidence. Even in unmodified cases a certain number of lesions may be seen which are small and ill-defined. And, on the contrary, in modified cases some large unmodified lesions may often be

[1] Brit. Med. Jour., June 6th, 1903.
[2] Phototherapy, by Niels R. Finsen, p. 27.
[3] Brit. Med. Jour., June 6th, 1903.
[4] Ibid. [5] Ibid. [6] Ibid.

TABLE GIVING THE RESULTS OF THE RED LIGHT TREATMENT OF SMALL-POX IN 13 CASES.

No.	Sex.	Age.	Vaccination.	Type of disease.	Result.	Day of efflorescence on which patient entered red ward.	Condition of rash on admittance to red ward.	Duration of treatment by red light.	Highest temperature during secondary fever.	Development of eruption.	Complications and sequelæ.	Remarks.
1	M.	9	Not.	Mild discrete.	Recovered.	First.	Early papular.	8 days.	102° F.	Normal.	Albuminuria.	—
2	M.	39	In infancy only.	Severe discrete.	,,	Fourth.	Late papular and vesicular.	6 ,,	100°	,,	—	—
3	M.	59	,,	,,	,,	,,	Papular and slightly vesicular.	9 ,,	101·4°	,,	Septic ulceration of skin.	—
4	F.	11	Not.	,,	,,	Second.	Papular; partly vesicular on wrists and ankles.	11 ,,	101·2°	,,	Slight delirium.	—
5	M.	35	At age of 20 only.	Confluent.	,,	,,	Vesicular.	9 ,,	Absent.	Modified.	Severe headache in secondary stage.	—
6	M.	39	In infancy only.	,,	,,	,,	Early papular.	12 ,,	100·2°	Partially modified.	Delirium, septic ulceration, and boils.	—
7	M.	25	Not.	,,	,,	Third.	Papular with some early vesicles.	9 ,,	102°	Normal.	—	—
8	F.	4	Two days before efflorescence only.	,,	,,	Second.	Early papular.	13 ,,	104°	,,	—	—
9	M.	2½	Not.	,,	,,	Third.	Papular.	15 ,,	104°	,,	—	—
10	M.	3	,,	,,	Died on the eighth day of efflorescence.	Second.	,,	5 ,,	102·6°	,,	Ulcer of cornea, slight laryngitis, otorrhœa.	Died from secondary fever.
11	M.	30	Doubtful.	Severe confluent.	Recovered.	Third.	Papular.	17 ,,	103°	,,	Alopecia, septic ulceration.	—
12	M.	40	In infancy only.	,,	,,	Second.	Early papular.	19 ,,	103·6°	,,	Albuminuria, delirium, and boils.	—
13	F.	19	Not.	,,	Died on the twelfth day of efflorescence.	,,	Papular and early vesicular.	9 ,,	104°	,,	Delirium.	Died from secondary fever. Exposed to daylight for about one minute on fifth day of efflorescence.

observed which suppurate as inevitably as they would in a case of unmodified small-pox. In fact, the same kind of lesion runs the same course whatever the nature of the case. Where cases differ is in the kind of lesion which is most plentifully developed.

If, therefore, treatment by red light has the effect of preventing the maturation of unmodified lesions that is an unnatural phenomenon which could hardly fail to be remarked. Certainly we did not remark it. The pustules in our cases were as large and as well developed as usual. In the red light, of course, their yellow colour was not apparent and the lesions had a fallacious appearance of remaining vesicular. We made a practice, however, of drawing off the contents and examining them by daylight and in Case 12, when the patient was taken into daylight to be photographed, we were able to satisfy ourselves that the pustules had developed normally.

If, on the other hand, we are to take it that this treatment has an effect similar to that of vaccination and causes what would otherwise be natural small-pox to assume a modified form then we must look only for an unusual frequency of modified cases. It is obvious that if great care be not taken to eliminate cases modified by vaccination or by a natural immunity it will be very easy to commit the error of mistaking an effect inevitable for one due to the treatment—an error to which many observers seem to have been prone. We realised our own danger in this respect, since the strain of disease existing in London last year was exceptionally benign and cases of all kinds showed an unusual tendency to exhibit modification. We were therefore at some pains to select cases which seemed likely to run an unmodified course. And in 11 cases out of the 13 our selection was justified. Two of our cases (No. 5 and No. 6) did exhibit modification, though one of them (No. 6) did so to only a partial degree. We attributed that result to our own defective judgment. It is, of course, open to anyone to suggest that the result was due rather to the treatment, just as it may be claimed that in the other 11 cases, with another form of treatment, the attacks would have been somewhat more severe. But such a modest claim is not what Dr. Finsen makes, not what we pretend to rebut, and not, we may add, what anyone has yet attempted to establish. Those "sequelæ due to suppuration" which the red light treatment is claimed to prevent, such as boils, ulceration, and the like, were very much in evidence in some of our cases.

Suppurative fever.—The presence or absence or the degree of suppuration are facts which can be described but not illustrated. The amount of suppurative fever can, however, be precisely recorded. The controversy as to whether or not suppuration is abolished or diminished by the red-light treatment appears to us to be beside the mark, since what matters is not the suppuration but its consequences—fever, scarring, and death. The fever of suppuration begins between the fourth and sixth day of efflorescence and any pyrexia occurring before that time may be ignored for our purpose. It will be seen that all the cases, with one exception, exhibited some rise of temperature. Secondary fever was absent in a case of modified confluent small-pox (Case 5). But suppression of the secondary fever is not an unusual occurrence in such cases. The fever was slight in some of the milder cases. In the more severe it was higher and in some it was considerable. It will be observed that in the mildest case, that, too, in which the treatment was begun earliest, the suppurative fever was rather pronounced. We are far from believing that the treatment had any effect in diminishing the suppurative fever in any of our cases.

Scarring.—A good deal has been said about the effect of the treatment in preventing pitting from small-pox. It may be worth while stating that with any rational treatment of small-pox scarring is absent in the majority of cases. Pigmentation is commoner but it is not lasting. It is chiefly in severe and unmodified cases that scarring is pronounced. We certainly did not think that our cases were exceptionally favoured in this respect. The milder cases recovered without scars and the more severe did not.

The time of inception of the treatment.—To physicians in whose hands this treatment has failed it has been objected either that the exclusion of white light was imperfect or that the treatment was not begun early enough. To the former objection it is certain that we have not laid ourselves open. And with regard to the latter we may remark that if objection is to be made on this score then the treatment ceases to be applicable in a small-pox hospital. It does not appear, however, that those who have been more fortunate in their results have applied the treatment earlier. Dr. Finsen claims that suppuration is prevented if the treatment is begun before suppuration is imminent. This condition was fulfilled in all our cases. In most the eruption was either partly or wholly papular and in some the development of papules was still incomplete. The rate at which efflorescence and vesiculation proceed differs a good deal in different cases and we rejected cases in which vesiculation was advanced even though the patients were in an early stage of the illness counting by time. As a rule the first sign of suppuration is to be noticed on the fifth day of efflorescence (about 96 hours after the first appearance of the papules). The majority of our cases came under treatment on the second or third day (24 or 48 hours after the beginning of efflorescence). In two cases only was the treatment delayed for 72 hours (till the fourth day). And in one case (Case 1) it began within a few hours of the first appearance of the rash.

We cannot agree that this treatment has any of the merits which have been claimed for it. Others observers who have tested it, as we have done, in selected cases, appear to have arrived at similar results. So far back as 1893 Juhel-Renoy[7] submitted 12 patients to the treatment and found no evidence in favour of it. His unfortunate results were attributed by Dr. Finsen to an imperfect exclusion of light. He does not specify on what grounds this criticism was based. Indeed, Juhel-Renoy's methods seem to us to have been stricter than those adopted by some observers whose results Dr. Finsen has approved. We suspect that it was the results which earned the criticism and the method which received the blame.

We attach the more importance to Juhel-Renoy's results because he had a fairly extensive experience of small-pox, having treated 2000 cases. Oettinger,[8] with a more limited experience (he had treated 250 cases), tested the treatment in eight selected cases of confluent and semi-confluent small-pox. Three of the patients died. The five who recovered were all vaccinated. Oettinger was of opinion that the course of the eruption was modified in these cases and that would probably be so, in some of them at any rate. But three of the five cases developed a marked secondary fever and most of them were scarred. Oettinger, who gave the treatment a modified approval, admitted that in these respects his cases did not support the claims of the Danish physicians. And though he thought that, especially in respect of scarring, his cases would not have done quite so well under a different treatment, no one, particularly no one with Oettinger's limited experience, could possibly determine beforehand how much fever and scarring to expect. It is enough for our purpose to point out that he did not prevent that train of events—fever, scarring, and death—which the treatment is reputed to avoid.

We may also refer to two cases treated by Schamberg[9] of Philadelphia. One patient had pronounced suppuration and suppurative fever and died. The second recovered and was badly scarred. It is only the extraordinarily exaggerated claims that have been made for the treatment which give pertinence to the results obtained in two isolated cases.

Our own results and those which we have quoted being so widely at variance with the claims made for the treatment it is a matter of some interest to inquire what justification the advocates of the treatment have for the faith that is in them. For the question remains whether, without abolishing suppuration and its consequences, the treatment has any sort of beneficial effect in this disease. Our own and the other cases do not preclude such a possibility. To test this question would involve a more prolonged and a comparative trial in which we are under no obligation to engage unless a *primâ facie* case has been made out by those who advocate the treatment.

We may be excused for pointing out that there are two methods of testing the efficacy of a remedy. Where the course of the disease is fairly constant (as in lupus), or even when this is not so, where a sufficiently accurate prognosis is possible, it is enough to apply the remedy in a limited number of cases. But if the disease is a very variable one it is often necessary to apply the statistical method and to compare large groups of cases with similar groups separated for purposes of control. In proportion to the variability of the disease on the one hand and to the insignificance of the effect of the remedy on the other the size of the groups must be increased to eliminate accidental errors. The method adopted by most observers who have commended this treatment has been to take a very limited number (as a rule not more than one or two dozen) of unselected cases—cases, that is to say, as they presented themselves, vaccinated and unvaccinated, mild or severe as might happen—and to draw their conclusions from the event. They have dealt with ten where hundreds were necessary and as a rule they have not concerned themselves with control cases.

Small-pox is a disease where such looseness is particularly unfortunate because, apart from variations owing to individual differences in natural susceptibility, we have to reckon with the disturbing factors not of vaccination only but of variability in the strain of disease. To illustrate the latter point we may instance the fact that the fatality from small-pox in London in 1902 was over 17 per cent. In 1903 it was less than 4 per cent. Had we proceeded last year to test the Finsen treatment by treating with red light all our cases, or an unselected minority of them, to what a false conclusion this disturbing factor would have led us. It is just as unsafe to neglect differences effected by vaccination in the susceptibility of communities. This treatment originated in Scandinavia and has its home there. We suspect that to be due less to the virtues of the treatment than to the commonsense of those communities which do not disregard the safeguards of vaccination.

Of the cases published by Scandinavian observers the largest series was one of 62 by Backman[10] of Viborg. For the cases of other observers we have not been able to obtain access to the original papers but the results are quoted in Finsen's "Phototherapy." The largest series were 23 by Abel of Bergen, 22 by Mygind of Naskov, 16 by Benckert of Gothenburg, and 11 by Feilberg of Copenhagen. The total number of deaths in these 134 cases was 11, a fatality of 8·2 per cent. Dr. Finsen mentions 15 other cases treated by various other Scandinavian observers without a death and their inclusion would make the fatality 7·3 per cent. We are not aware how these figures compare with the fatality in small-pox commonly observed in Scandinavian countries but they would not be very unusual in London. The fatality is the only indication that we have to judge of the course pursued in these cases, since there is a remarkable absence of all other essential information about them. We do not know how many of the patients were vaccinated or what was the type of disease from which they suffered. As a rule, there is no exact information about the extent of the secondary fever. Though we have no means of knowing on what basis the claims rest the authors speak of favourable results having been met with in respect of suppuration, fever, and scarring. Most of them admit, however, the occurrence of one or another of those events in some of their cases. Backman, for instance, speaks of suppuration and suppurative fever (from which some of his patients died). The peculiarity of his cases seems to have been that none of them were scarred.[11] It is difficult to avoid the suspicion that the supposed peculiarities in these several results were due chiefly to a

[7] Bulletin et Mémoire de la Société Médicale des Hôpitaux de Paris, December, 1893.

[8] Semaine Médicale, 1894.

[9] Journal of the American Medical Association, May 2nd, 1903. Dr. Schamberg in this paper, which we had not seen when the above was written, makes a valuable critical analysis of the theoretical considerations and practical results on which the red-light treatment is based.

[10] Finska Läkaresällskapets Handlinger I., xl., No. 5.

[11] Backman found the treatment equally efficacious in measles and scarlet fever. It is difficult to decide whether such a statement throws more doubt upon the capacity of its author for critical observation or upon those theoretical principles on which the treatment is based.

limited experience of the disease on the part of the observers. For instance, in Finsen's "Phototherapy" the photographs and temperature charts are published of three cases treated by Feilberg and Benckert. Two were cases of severe discrete and one of modified confluent small-pox. The illustrations we presume to be given to show the favourable effect of the treatment. But not in the character of the eruption, in the extent of secondary fever exhibited, or in the amount of scarring stated to have been developed can we see that these cases were remarkable.

When these authors speak of the absence of suppuration, fever, and scarring in their cases we shall probably be right in concluding merely that those phenomena were not prominent in the majority of their cases. But even in communities like our own, only partly protected by vaccination, most of the cases escape those incidents. The point is capable of illustration in the case of secondary fever. We have taken at random the first hundred cases completed in our hospital during the current year and we find that 30 were unvaccinated and that there were 12 deaths, indications of a type of disease severe beyond the ordinary. Yet most of the cases presented no secondary fever whatever and (excluding the 12 fatal cases) in only six did the range of temperature exceed 39° C. (102·2° F.). In a better vaccinated community and with a milder strain of disease it would be possible to give a handsome testimonial to any sort of treatment by following the lines of the Danish physicians.

A few series of cases have been published by physicians in other countries. 18 patients were treated by red light by Dr. J. T. C. Nash [12] of Southend. He compares his cases with another series of 12 (which, however, did not synchronise with the first) treated in daylight. Dr. Nash speaks in very guarded terms of his results and we do not think he would ask us to suppose that the difference in fatality between 25 per cent. and 5½ per cent. is attributable to the treatment adopted.

Casassa [13] has recorded the treatment of six patients by red light. All were vaccinated. The results are stated to have been favourable but the paper does not call for serious comment. The treatment has also been approved by Engel [14] who had some experience of it in Cairo. We have not been able to consult his paper.

We know of no other published observations favourable to the red light treatment. But on the other side we have a series of about 300 cases recorded by Brayton [15] of Indianopolis. Brayton has not published details of his cases but he took the precaution of treating at the same time an equal number of patients in wards lighted by the ordinary methods. He found that in no respects did the patients under the red light treatment do any better than the others. Suppuration, fever, scarring, and death were all unchecked.

We think that we have succeeded in showing not only that the case for this method of treatment is not proved but that no serious evidence has been advanced in favour of it. We would recommend those who are disposed to practise it to do as Brayton has done and to treat at the same time an equal number of patients in ordinary wards. We would suggest also that as it only clouds the issue and prolongs the trial to include the mass of mild cases in vaccinated persons it would be better to limit the trial to unvaccinated patients. When a sufficient body of evidence in support of the treatment has been collected on these lines it will be time enough, it seems to us, for the matter to be pressed on the attention of the profession. We are not ourselves disposed to embark on the inquiry for the reason that we derived from the study of our cases the very unpleasant impression that the effect of the treatment was harmful. We thought that it had an unfavourable effect on the general condition of the patient. The tendency to mental symptoms (delirium, headache, restlessness, &c.) seemed more marked. The suppurative fever, too, appeared to us to range higher than might have been expected. It is true that we found the patients did well in respect of affections of the eye. That was to be expected. But, on the other hand, we thought that they had more than their fair share of the other septic sequelæ of small-pox.

We cannot say how far these impressions were justified by the facts. Assuming that we were right it is, of course, possible that some of the results were attributable to the oppressive gloom and colour of the ward. But our objections lie deeper than that. For not only was it difficult to keep a close watch on the development and progress of the eruption and on the patient's condition, but it was difficult to carry out those personal and general hygienic measures on which the successful treatment of small-pox so much depends. Above all, in excluding light we must necessarily limit the supply of air. In all suppurative conditions, and especially in small-pox, not only an abundant air space and good ventilation but the freest circulation of air is essential. Any form of treatment which puts a check on the supply of fresh air must be regarded with suspicion unless it brings solid advantages in compensation. That substantial advantages do not attach to this form of treatment we feel sure. We therefore hope that this paper may have the effect of discouraging further application of the remedy in this country. But we venture to appeal also to Dr. Finsen, who has done so much for suffering humanity, to cease to lend the weight of his authority to support a method of treatment which, if it is inefficacious, must necessarily be inhumane.

[12] THE LANCET, March 5th, 1904, p. 646.
[13] Il Morgagni, 1902.
[14] Therapie der Gegenwart, March, 1901.
[15] Journal of the American Medical Association, July 25th, 1903.

SLEEPING SICKNESS: A RÉSUMÉ.[1]

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SLEEPING SICKNESS has been known in West Africa since 1803. Our knowledge of the origin of the Uganda epidemic is very vague. Though many natives date its beginning from 1896 it did not become known to Europeans until 1900. The fact that the natives of Uganda were not acquainted with it is no proof that former epidemics have not occurred, for they have no written records, their memories are short and inexact, and their ideas of the lapse and computation of time are rudimentary. It is quite possible that the disease is endemic in certain spots and becomes epidemic only under conditions favourable to it which may sometimes recur after long intervals. It is also quite possible that when more epidemic areas have been worked out and the organic cause has been more firmly established endemic patches may be found to exist from the great lakes to the West Coast of Africa. One of the greatest difficulties in the study of sleeping sickness has always been the extraordinary duration of the incubation period. It was long ago surmised, from cases which occurred among slaves who had been to the West Indies from Africa, that as long as seven years might pass before the disease manifested itself, while, from cases observed in Uganda, it seems certain that one or two years may elapse. Such a long and uncertain period, combined with the slow course of the disease itself, which may probably occupy any time from two months to two years, renders the scientific study of cases most difficult and in the vast majority of cases impossible. To this must be added the extreme difficulty of identification of most African natives when under intermittent observation only.

Sleeping sickness attacks all ages and both sexes but infants usually escape, and old people, who are not themselves numerous among African natives, are perhaps less liable. As was formerly pointed out by myself [2] children under three years of age rarely show the disease, the reason possibly being that they are kept more in the houses and villages and so are less exposed to infection. But the long period of incubation or latency must also be borne in mind, for it is conceivable that infection during infancy might frequently not result in sleeping sickness until early childhood. The malady does not seem, however, to attack all classes equally. The higher chiefs seem less liable to it and Europeans have remained almost immune, probably in both cases for similar reasons. As might be expected from its long incubation and slow course the onset of the disease is most insidious. It is practically impossible to say, with regard to any given case, on what exact date the symptoms commenced, while even approximate dates are difficult to verify. No doubt some sudden nerve crisis, such as a fit or an attack of mania, may sometimes draw the attention of the patient or his friends to his condition and often a period of days, weeks, or months

[1] Abstract of a paper read before the Islington Medical Society.
[2] Journal of Tropical Medicine, Oct. 1st, 1902.

will be given on inquiry for the duration of the symptoms, but it always remains very doubtful for how long previously the patient may have been ailing.

Clinically the course of sleeping sickness has been, for convenience, divided into three stages, but their limits are very ill-defined. They are (1) the early stage, (2) the pronounced stage, and (3) the lethargic or somnolent stage. There is also sometimes an intermediate stage of nerve crisis, excitement or exhilaration, which occurs usually at the beginning of the second stage and is really a part of it. Probably the earliest subjective symptom is a chronic persistent or intermittent headache with lassitude and this may be accompanied with, or replaced by, vague pains in the back, chest, or "all over." With regard to objective signs pyrexia, if constantly looked for, may practically always be detected. From the first there is a general enlargement of the lymphatic glands, in which glands from the size of a filbert to that of a hazel-nut are found in most or all of the superficial groups, those of the neck being the most constantly affected. One of the earliest signs usually noted is an arhythmical, jerky, or twitching tremor of the tongue. There may also be an alteration of mental attitude or habits which, however, is often noticeable only by relatives or associates of the patient. As none of the above symptoms, unless it be the tongue twitching when well marked, is in any way pathognomonic it is to a combination of them that one must look for a diagnosis in the early stage. A conjunction of chronic headache or pain with lassitude, tongue tremor, and glandular enlargement is always very suspicious in a person who has visited an epidemic area, and if there is also evidence of change in disposition or if there is recurrent pyrexia the diagnosis becomes almost certain. Another early, though less early, symptom is a more or less general pruritus, of which there may be evidence in the form of scratch-marks or small sores, but which is not definitely associated with any kind of rash. Very soon there may be some muscular weakness, chiefly noticed at first in the lower limbs. The patient's appearance and behaviour are generally normal, at least while under medical examination or to ordinary observation, and diagnosis may be very difficult. The more cases one sees the more difficult it becomes to make a negative diagnosis in patients exhibiting symptoms of the early stage.

In the second or pronounced stage the diagnosis becomes almost always easy and certain. As a rule, it may be dated from the characteristic alteration which begins to take place in the patient's facial expression and general appearance, often accompanied by a change in his manner, habits, or disposition. This stage, however, is not infrequently ushered in by nervous crises such as epileptiform fits, attacks of mania, melancholia, or dementia, or by a state of exhilaration during which the patient has very much the appearance of being under the influence of alcohol. The duration of these nerve crises is generally short relatively to the duration of the disease, but they may recur or be continued into the later stages. During their continuance the patient often suffers from, and may complain of, sleeplessness. Very early in the second stage, if not frequently before, sexual impotence occurs in males though there is occasionally an outburst of excitement during the phase of exhilaration or mania. In women the menses cease early, often indeed before they have noticed any signs of illness, so that one is tempted in such cases to antedate the alleged time of onset of the disease by the period of duration of amenorrhœa. With the development of the second stage tongue twitching becomes more marked and tremor begins to spread to the cheeks and lips and to the body generally. In some cases, especially children, choreic twitchings, occasionally general but more often confined to the face and the arms, will be observed, and they might perhaps more properly be included among the nerve crises above enumerated. The muscles become flabby, the face begins to lose its expression and the limbs their strength; the speech often becomes mumbling and the articulation blurred. Fibrillary tremor becomes visible in the tongue, facial, and systemic muscles. The eyes get a vacant, stolid, tired, or suffering look. The vague pains about the head, trunk, and limbs continue and are sometimes severe. Soon there is disinclination to move or to speak and inability to fix the attention for any length of time. There may now be signs of muscular wasting but this occurs late as a rule and even then not invariably, a good deal depending on the patient's ability to obtain food. At length there is a tendency to sleep at all hours and the patients pass surely but gradually into the last or lethargic stage which has been so graphically described and in which they eventually die, sometimes suddenly but nearly always very slowly, so that the vital functions seem to dwindle away gradually.

As occasional symptoms in the last stage may be mentioned a movement of thumb and finger or fingers, generally of one hand only, resembling paralysis agitans but not truly rhythmical, also athetosis, convulsions, ptosis, and conjugate deviation of the eyes with a movement resembling nystagmus. A troublesome stomatitis or marginal ulceration of the gums is common at almost any stage and if cured may recur again and again, but it is not to be regarded as a part of the disease.

In the first and also in the second stage there may occur, as was formerly pointed out by myself,[3] intermissions or remissions of the symptoms which may be of considerable duration—occasionally even months—but which tend to grow shorter as the disease progresses. During these intervals symptoms almost or entirely disappear so that the patient may seem, to casual observation at any rate, quite well. Even in a well-advanced stage patients may be sufficiently roused for their appearance and behaviour to present little abnormal to an ordinary examination.

On surveying the symptoms broadly two facts stand out fairly clearly: first, that they are to a great extent intermittent in character and not steadily progressive; and, secondly, that on the whole the nervous symptoms are secondary to the general, a fact which points to a general infection rather than a local disease.

The chief pathological evidence of general infection is the constant enlargement of lymphatic glands in all, or nearly all, the groups, both superficial and deep, while a chronic encephalo-meningitis presents itself as in all probability the fatal lesion. Besides the naked-eye evidences of this lesion there are the microscopic changes described first by Mott and confirmed by other observers. At present, however, they have not been described as occurring in inoculated animals and the question may still be considered open as to how far they are to be connected with the various organisms which are being studied in causal relation to the disease and even how far they can be considered as the actual and necessary cause of death, or of the whole of the nervous phenomena associated with sleeping sickness.

The two organisms which are at present being studied in connexion with sleeping sickness are the diplo-streptococcus described by the Portuguese Sleeping Sickness Commission of West Africa and afterwards by Castellani, and the trypanosome discovered by Castellani, of which the importance and universal presence in sleeping sickness in Uganda were worked out by Bruce. The trypanosome occurs not only in the blood but in the cerebro-spinal fluid in sleeping sickness, which thus differs from the condition at present known as trypanosomiasis, in which the organism is found in the blood only.[4] There seems to be no doubt from Bruce's investigations that at any rate the chief carrier of the trypanosome is glossina palpalis, a tsetse fly the distribution of which in the Uganda Protectorate corresponds roughly with the epidemic area. Whether this correspondence exists in other epidemic areas is not yet worked out.

Inoculation experiments by Bruce, in which the inoculations were made respectively with the blood or cerebro-spinal fluid of sleeping sickness, the blood of trypanosomiasis, by the bites of fed flies and of wild flies, have produced trypanosomiasis in monkeys (cercopitheens), some of which have died, always after a period of months, in a condition clinically resembling sleeping sickness, and the macroscopic appearances at the necropsies have appeared to be identical with those seen in sleeping sickness.

How the diplo-streptococcus finds entrance to the human body is not at present known but it is pretty constantly found. The Portuguese Commission found it in 52 per cent. of the cerebro-spinal fluids which they examined and in many of the negative cases it was present in other organs. It has been found in various tissues, rarely in the blood, but, as far as I can learn, in no case yet more than six months before the fatal ending. It is found in large numbers in the microscopic brain lesions. It has not produced in animals by inoculation symptoms resembling

[3] Loc. cit.

[4] Since this paper was written the trypanosome has been described as occurring more plentifully in the lymph glands than elsewhere, both in trypanosomiasis and in sleeping sickness, and one of the cases of trypanosomiasis under observation is thought to be developing some signs of sleeping sickness. Greig and Gray: THE LANCET, June 4th, 1904, p. 1570.

sleeping sickness but causes death by acute septicæmia in from two to four days in rabbits and other small animals and in from one to three weeks in the cercopithecus. Its presence has not so far been recorded in those animals which have died with symptoms of sleeping sickness after inoculation with trypanosomes. It is considered, however, by some of the most competent observers engaged in the matter to be in some way intimately associated with the disease, with the microscopic brain changes, and with the fatal ending.

Taking the disease as a whole, and especially from a clinical point of view, the hypothesis of trypanosome causation would seem to cover more of the facts. The areas of distribution, so far as at present known, the distribution and habits of glossina palpalis, the comparative immunity of Europeans and apparently of the better class natives in infected areas, the fact that the disease appears to be incommunicable outside these areas, the long incubation, the course and the apparently invariable fatality of the disease, the greater resemblance to sleeping sickness of the malady produced in inoculated monkeys as compared with the acute septicæmia produced by the coccus—all these facts seem to favour the hypothesis of initial trypanosome infection; whereas some, at least, such as the long incubation and duration, the invariable fatality, the comparative immunity of Europeans and the impossibility hitherto of producing a disease analogous with sleeping sickness in animals, appear to tell rather against a streptococcal etiology, though they do not, of course, exclude the possibility of an association or secondary infection with the streptococcus being of the greatest importance to the course of the disease. The analogy of sleeping sickness with nagana is surely nearer than that with any streptococcal infection known. I have been unable to learn, however, that nagana ever occurs in epidemic form among indigenous animals as sleeping sickness does among indigenous natives.

In Sir Patrick Manson's classic case of trypanosomiasis in a European lady who died only a few months ago in which the history was well established and in which trypanosomes had been present from the first, sleeping sickness at length after two years developed in an unmistakable form. The streptococcus was found in the cerebro-spinal fluid and the tissues after death but it was probably present for some time previously and may even have been acquired before the patient left Africa. It seems from this case, however, quite reasonable, in the present state of our knowledge, to assume the hypothesis that the trypanosome is the initial cause of the disease and to suppose that there may be a more or less prolonged febrile or latent stage of trypanosomiasis which may end in sleeping sickness if the organism finds its way into the cerebro-spinal system.

In the case of native Africans we have been able neither to fix the date of inoculation nor to trace a history of initial pyrexia in cases of sleeping sickness, though a certain number of cases of trypanosomiasis remain under careful observation. As has been mentioned above, pyrexial attacks, often very slight, may probably always be recognised very early in the disease if there is the opportunity of looking for them. In Europeans one could, as a rule, obtain a history of precurrent febrile attacks by careful inquiry but in the case of natives it has proved so extremely difficult to obtain any trustworthy information that it remains quite possible that they do occur. In none of the natives with trypanosomiasis whom I have seen has the pyrexia or illness been severe, nor, beyond the fact that they have felt ill for a day or so, would they be able to tell much about it even shortly afterwards.[3] They do not recognise pyrexia as such. They may feel heat, cold, pain, or weakness but will often deny having fever even with a high temperature. To a slight or moderate febrile attack, to anything but a severe or prolonged illness, they would attach little importance, while, if it had occurred several months, or even weeks, before sleeping sickness they would not connect the two even if they remembered it.

As to whether trypanosomiasis must necessarily and inevitably pass into sleeping sickness, there is some slight reason to believe and to hope not. In the conditions in which many groups of natives live it would seem quite impossible for any of them to escape repeated inoculation and yet a few, in many cases at any rate, have so far escaped death. From this it may be hoped that the trypanosome may in certain circumstances die out in the blood; that those conditions which are favourable to its reaching and inhabiting the cerebro-spinal system and which may perhaps include association with, or secondary infection by, the streptococcus may never occur. The outlook at present is far from promising. There is no curative treatment known which is of any value. The prospects of exterminating the trypanosome or the fly are so far hopeless and it may prove that we have also the streptococcus to deal with. We may be able, however, to control the numbers and action of the fly to some extent. We already know much of its habits and the localities which it affects. Roughly speaking, it may be said to haunt jungle only—shady places with thick undergrowth, preferably near water—and not to move far from its haunts. It does not seem to penetrate into large open villages or clearings. It is not usually seen in decently hoed native gardens or plantations, nor does it occur in European settlements. It can, then, to a certain extent, be avoided.

The reasons why there is such a marked relative immunity for Europeans are probably: 1. Their manner of clothing leaves exposed a less area of skin than that of the natives and only the more sensitive parts, the hands and the face. 2. They do not live, or lie asleep in the day-time, nor do they usually work, in jungle or forest. They are less liable to get bitten and, when they do, they are more likely to brush off the fly before inoculation has been completed, for the insertion of the proboscis of the fly is easily felt, like the prick of a needle.

A systematic clearing, then, of the usual places of living and working, of the villages, watering places, landing places, &c., of the natives and the removal of the sick into open spaces would do much to diminish the risk run by the majority, especially the women and children. The more they aggregate into large villages and clearings and the less they live like animals in uncleared jungle the less likely they will be to be bitten by the tsetse fly and though, of course, some occupations, such as fishing or wood-cutting, will always be dangerous, the smaller number exposed to infection the less probability will there be of the occurrence of widespread epidemics. In the immunity of Europeans lies the best hope for the native.

Uganda.

[3] Loc. cit.

THE SYMPTOMS AND TREATMENT OF THE INTRACRANIAL COMPLICATIONS OF OTITIS MEDIA; WITH CASES.[1]

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CHRONIC suppurative inflammation of the middle ear is a disease of such great frequency and is liable to such a variety of complications, some of them of minor import but some of them fraught with extreme risk to life, that its study is of interest to all medical practitioners. The study of the disease itself, its minor complications and treatment, would alone occupy more than the limited time at my disposal to-night even were I in a position to throw any fresh light on the subject, and I shall not essay the task in the presence of professional colleagues who are better qualified than I to do so. But when the disease spreads beyond the temporal bone and invades the cavity of the cranium complications may arise which call for immediate and sometimes heroic surgical measures, and it is of these that I wish to say a few words. Upon a prompt recognition of their symptoms the patient's life may often hang and the busy practitioner who forms an early diagnosis has as great a part in saving the patient's life as the operator who successfully deals with the case with the knife. The tardy recognition of a meningitis which has become general or of a septic thrombosis when the lungs are riddled with abscesses is practically of no value except for prognosis, for operation is then an almost hopeless proceeding and, in fact, only tends to bring discredit upon surgery.

The three intracranial complications which are of greatest frequency and importance are: (1) Intracranial abscess either between dura mater and bone or in the cerebrum proper and cerebellum; (2) thrombosis of the sigmoid

[1] A paper read before a meeting of the Post-Graduate College on June 20th, 1904.

portion of the lateral sinus; and (3) septic meningitis. But it must be remembered that any two of these complications or even all three may be present in a single case. The shell of bone which separates the tympanum and its accessory cavities from that of the cranium is in places so thin that it is a matter of some wonder that brain complications are not more frequent than they are in middle-ear disease. But that the risk of life is a real and serious one is shown by the fact that few, if any, of the better-class insurance companies will accept the life of a proposer with any active middle-ear disease without an almost prohibitive addition to his premium. Such complications are more frequent in childhood than in adult life, partly because the petrous bone in childhood is thinner than in after years and partly because acute otitis media most commonly commences in childhood and the risk of extension is, of course, greatest while the disease is most active.

In order as much as possible to avoid repetition and to limit my remarks to the hour at my disposal I will discuss seriatim the symptoms common to all such complications, laying stress on any points of diagnostic importance.

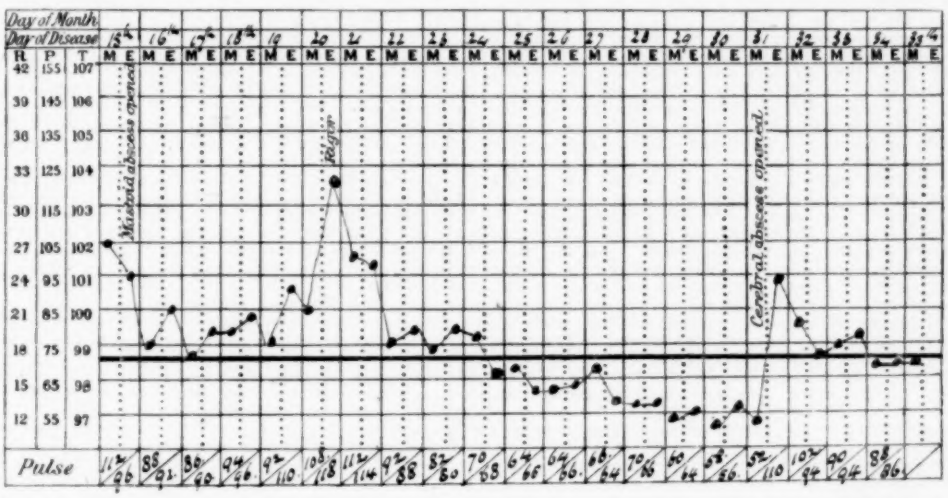
The ear discharge.—It must always be remembered that there may be no visible ear discharge in these cases. Even when the otorrhœa has previously been profuse it frequently ceases or becomes much diminished on the onset of cerebral complications. Amongst the poorer and less observant class of patients, no discharge may ever have been noticed; and this occasionally throws the practitioner off his guard. Where present, the discharge is usually extremely fœtid and the same fœtor is often present in the patient's breath, his excreta, and in the pus which is evacuated from the brain or lateral sinus. In a doubtful case an examination of the ear should always be made. After cleaning the external meatus of inspissated pus or cerumen, a perforation will then almost always be discerned in the membrana tympani or the membrane may be found entirely destoyed. Cases, however, of cerebral abscess have been recorded following middle-ear disease where the membrane was still intact.

Pain.—Pain is usually the first symptom complained of in all these cases. It is "boring" or "shooting" in character, and is usually one-sided. It is often agonising and apt to come on in paroxysms. The intensity of the pain and its usually one-sided character help us to distinguish sinus thrombosis or cerebral abscess with typhoid abdominal symptoms from enteric fever in which the headache is a more general one and is not so prominent a symptom. The pain usually remains a prominent symptom throughout the case or as long as the patient retains his consciousness. As coma supervenes in the later stages of cerebral abscess or meningitis the sensibility becomes impaired, but in sinus thrombosis it often remains until the end.

Tenderness.—With the pain there is usually great tenderness over the mastoid and temporal regions; in fact, the whole side of the head is often acutely tender to the touch. Such tenderness may of course be due to suppuration limited to the mastoid cells and antrum or to a sudden lighting up of mischief in the middle ear. But in these cases the tenderness is more limited in its area and is soon followed by œdema of the tissues over the mastoid process, the ear itself being pushed forwards and downwards. When the lateral sinus is involved if the skin behind the ear be carefully and systematically palpated an exquisitely tender point may sometimes be elicited which corresponds with the exit of the mastoid emissary vein from the skull. This is a very significant symptom when present and attention has been called to it by my colleague Mr. L. P. Gamgee. In the later stages of sinus thrombosis when the infective process has extended to the extracranial portion of the jugular vein swelling and tenderness appear in the upper portion of the posterior triangle of the neck and spread downwards along the course of the vein. In doubtful cases, where it is difficult to say on which side the brain trouble is, percussion of the two sides of the head is sometimes of value, the patient wincing when the affected side is tapped.

Rigors and vomiting.—These frequently herald the extension of the disease from the bone to the brain. Such rigors do occasionally occur when only the mastoid antrum is involved. But the occurrence of a rigor in a case of ear disease is always of grave significance and should in any case be followed by an operation on the antrum if such has not already been made. In some cases the rigor is slight, particularly in cerebral abscess, and it may pass unobserved. It is frequently called a convulsion by the patient's friends. They are most frequent in sinus thrombosis and are usually a marked symptom throughout the disease, occurring at intervals of two or three days and each one followed by profuse perspirations—in fact, being the typical rigors of pyæmia. In septic meningitis they occur at irregular intervals. Vomiting without any gastric disturbance is also an early symptom and continues at irregular intervals throughout the course of cerebral abscess and meningitis. It occurs also in sinus thrombosis but is not so prominent a symptom. Complete anorexia and rapid wasting with vomiting are very suggestive of abscess formation in the brain and are particularly prominent symptoms when the pus is forming in the cerebellum.

The temperature, pulse, and *respiration* are liable to extreme variations and vary much in the course of the particular complication. In cerebral abscess forming slowly and without meningitis, the temperature after the first initial rise has a tendency to fall and gradually become subnormal. At the same time as the abscess enlarges and the intracranial pressure increases the pulse and respiration also fall in frequency. The pulse is slow, often soft rather than full, and may fall as low as 35 or 40. The respiration falls with the pulse and in cases unrelieved by operation actually stops some time before it. These changes in pulse and respiration are most marked in abscess of the cerebellum.



The respiration in these cases may be Cheyne-Stokes in character and the pulse extremely slow. When, however, the abscess is of quick formation, and accompanied by meningitis and encephalitis of the surrounding brain tissue, both temperature and pulse may continue high, but even then as the case progresses both show a tendency to fall. (See chart.)

The temperature chart in sinus thrombosis is usually quite typical. It is a high one with marked remissions between the rigors. During these the temperature may rise as high as 105° or 106°. It seldom, however, falls to normal between them and when septic emboli have formed in the lungs the remissions become less marked. The pulse varies with the temperature. During the rigors it may be almost uncountable and then fall to between 80 and 90 afterwards. The respirations at first vary with the temperature but when the lungs become involved gradually merge into the shallow, painful, catchy breathing of pneumonia. The occurrence of stitch-pains in the side and difficult painful respiration in the course of a case is always a dire omen and is soon followed by the expectoration of the characteristic "prune juice" fœtid sputum, with local patches of dulness over the bases of the lungs and other evidences of breaking-down pulmonary infarcts.

In meningitis the temperature is irregularly high (from 102° to 104°) but does not show the marked remissions of sinus thrombosis. The pulse remains consistently rapid and as the fatal issue approaches frequently cannot be counted. The breathing is usually rapid but where the base is much involved may be Cheyne-Stokes in character. The bowels are usually constipated in meningitis and cerebral abscess, while diarrhœa with very fœtid stools is often present in sinus thrombosis.

Appearance and odour of the patient.—During the progress of a case of cerebral abscess the patient rapidly emaciates and his complexion usually becomes of a peculiarly sallow earthy tinge. A yellowish tinge is sometimes present in sinus thrombosis but neither is characteristic. There is often a peculiarly offensive odeur about these patients, their mouths, breath, and excreta generally having exactly the same smell as the pus which is afterwards liberated from the cerebral abscess or infected sinus. In cases of sinus thrombosis where abscesses have formed in the lung the smell is generally abominable and putrescent and may necessitate the isolation of the patient.

The intellect and senses.—In a typical case of cerebral abscess, as the pus forms and pressure increases, the cerebral processes become slower and duller. The patient at the commencement shows a decreasing interest in things around him and an increasing forgetfulness. These symptoms are soon followed by a drowsiness from which it becomes more and more difficult to rouse him. In this state he remains oblivious of any wants, though he can generally be roused for a few moments to take food or when loudly spoken to. There are at the same time rapid failure in the muscular power and wasting of the muscles. As the abscess increases in size this drowsiness deepens into actual coma from which he cannot be roused by any stimulus. In this stage there is usually involuntary passage of urine, or sometimes complete urinary incontinence, and the urine frequently contains albumin which may disappear after evacuation of the abscess. In sinus thrombosis the contrast is a complete one. In the absence of a complicating meningitis the intellect is often unclouded and the senses are undimmed to the very last. I have in one or two cases noticed a peculiar hypersensitive state of the patient with a tendency to chatter about himself which is quite characteristic of this disease. When meningitis supervenes on abscess or sinus thrombosis these symptoms are masked by those of meningitis and partial or complete coma quickly sets in.

Eye changes.—When abscess of large size exists in the temporo-sphenoidal lobe it may produce complete paralysis of the third nerve on the same side by direct pressure causing ptosis, immobility of the eye, with an external squint and dilated and fixed pupil; when the abscess is small the pupil is usually small and sluggish in its action to light. There is usually optic neuritis in both cerebral abscess and meningitis and in the former it is sometimes most marked on the side of the abscess. In meningitis the pupil changes are usually bilateral and the neuritis is intense. In uncomplicated sinus thrombosis there are no changes in the pupil and, as a rule, no optic neuritis.

Muscular paralysis.—Temporo-sphenoidal abscess when of large size may cause hemiplegia or paresis of the muscles on the opposite side of the body, the facial muscles being most affected. This must be carefully distinguished from the facial paralysis sometimes present from direct implication of the nerve in the disease, as it lies on the aqueductus Fallopii. The paralysis in this case is a complete one and on the same side as the abscess. Sensory aphasia has occurred in several nervous cases of temporo-sphenoidal abscess from direct pressure on Broca's convolution. It is generally difficult, owing to the mental condition of the patient, to detect slight paralyses, but in such cases the dynamometer may give valuable help. In sinus thrombosis there are no characteristic paralyses.

Chest signs and symptoms.—These are of little clinical importance in abscess and meningitis but of the gravest importance in thrombosis. The emboli carried into the blood-stream usually lodge in the minute pulmonary blood-vessels and set up multiple small pyæmic abscesses. The embolism, as a rule, takes place about the second or third week. The earliest signs are often a "stitch" pain in the side and a short hacking cough. These are soon followed by the appearance of scattered patches of dulness over the bases of the lungs. The consolidated patches quickly break down and the patient coughs up the characteristic fœtid "prune-juice" sputum. Unfortunately, when the lungs have become involved surgery has little chance of success and operation on the sinus is generally too late. In other cases the systemic infection seems to cause a train of abdominal symptoms. Frequent vomiting, with abdominal distension and pain, sets in and continues. The stools are loose and often there is profuse diarrhœa, the stools having the characteristic fœtid odour of the breath and ear discharge. Together with these symptoms there may be enlargement of the spleen. These cases are frequently mistaken for typhoid fever which they closely resemble. There are, however, no characteristic rose-spots but perhaps a dull-red, general, mottled rash and the blood does not give the Widal reaction. There are in addition the head and ear symptoms and the headache is much more severe and often unilateral. There are certain other local signs of thrombosis which in doubtful cases may assist in the diagnosis and which may be alluded to here. In a considerable proportion of the cases the soft tissues over the mastoid, besides being tender, are also œdematous. As the thrombosis extends down the internal jugular vein there will be pain and tenderness below and in front of the mastoid process and the thrombosed vein may actually be felt as a hard tender cord. The deep lymphatic glands and soft tissues around the vein soon become inflamed and swollen. Pus will eventually form around the vein and point in the neck below the mastoid process. The pain and tenderness in the tissues of the neck cause stiffness but usually the actual retraction of the head, so characteristic of meningitis of the base, is absent. The mastoid emissary vein may be distended or thrombosed. The acute tenderness over it I have already alluded to.

The prognosis in all the intracranial complications of middle-ear disease is a grave one. General septic meningitis is the gravest of the three. Personally I doubt whether in any case where the meningitis has become a general one has the patient ever recovered; nor do I think that surgery at present holds out any chance to the patient. When the pus formation is localised and the abscess forms between the dura mater and the bone the prognosis is much more hopeful; such abscesses may even discharge themselves through erosion in the bone into the tympanum. I have published such a case and many others are on record. Cerebral abscess usually proves fatal in a few weeks. Rare cases have been recorded where the abscess has become encysted and ultimately absorbed. But this, however, rarely if ever happens where the abscess owes its origin to ear disease. On the other hand, there is no cerebral affection in which surgery has shown such brilliant results. Probably quite two-thirds of the cases of abscess above the tentorium undergo complete recovery after free evacuation and drainage. The prognosis of cerebellar abscess after operation is more grave than that of abscess in the temporo-sphenoidal lobe. The pressure symptoms on the delicate structures at the base of the brain are more rapid and severe and the risk of meningitis after operation is greater.

Infective thrombosis of the lateral sinus if unrelieved is almost invariably fatal. Post-mortem examinations, however, do occasionally reveal a lateral sinus which has been obliterated many years before death, where from the presence of old-standing ear trouble the process has in all

probability been an infective one. But the micro-organisms cannot in such cases have invaded the thrombus. In THE LANCET in 1861 P. Hewitt reports a case where after apparent involvement of the lungs recovery eventually took place. If systemic infection has not already occurred operation holds out a reasonable prospect of recovery. But when the lungs are already involved surgery is almost powerless. Nevertheless, an attempt should be made to shut off and to remove the source of the infective emboli.

Treatment.—Various operations have been devised by surgeons for the relief of intracranial abscess and sinus thrombosis, the object in the one being the detection, tapping, and efficient drainage of the abscess, and in the other the opening and complete cleansing and drainage of the infected sinus. Into the details of these various operations I do not propose to enter, but I wish briefly to touch upon the operation which I carry out in these cases and which has never failed in my hands to discover the pus when present.

The entire scalp should be shaved the day before the operation when this is possible. After this is done it is thoroughly cleansed with soap and water and afterwards with an alcoholic solution of 1 in 500 biniodide of mercury and enveloped in a mercurial or carbolic compress. The auditory meatus at the same time is thoroughly cleansed, all inspissated pus is removed, and the condition of the membrana tympani and tympanum is determined. These processes should all be repeated on the operating table. If the patient is still conscious chloroform is the best anæsthetic as it causes less cerebral congestion. But a most careful watch must be kept upon both the pulse and respiration throughout the whole operation, the respiration in particular being liable to fail and to stop when the intracranial pressure is great, especially when abscess is present in the cerebellum. When the patient has already lapsed into a state of coma no anæsthetic will be needed or at most a few whiffs of chloroform to dull the pain of the skin incision. Various incisions are recommended and different authorities give widely differing landmarks for the exposure of the mastoid antrum, the lateral sinus, and the brain (above and below the tentorium). I shall only mention the one which I usually employ and with which I have every reason to be satisfied.

The first stage in the operation is to open the mastoid antrum and to lay its cavity freely open into that of the middle ear. We may thus in some cases be able to trace the course of the disease backwards through the bone and to form some idea of the situation and extent of the intracranial mischief when present. To do this an incision with a slight concavity forwards is made directly down to the bone, through all the tissues of the scalp, and extending from a point on a line with the top of the pinna almost as low as the tip of the mastoid process. The soft tissues are elevated from the bone and the pinna drawn well forwards; the margins of the osseous meatus and boundaries of the suprameatal triangle under which the antrum lies are defined. By means of bone chisels and gouges the antrum is opened just above and behind the auditory meatus. It is often very much enlarged in size and the whole of its outer bony wall is to be removed and its cavity thoroughly cleansed. The cavity of the antrum is then laid freely open into that of the middle ear and bony meatus by chiselling through the bridge of bone which lies between the surface of the skull and the aditus of the antrum. While freely opening the middle ear and antrum it is sometimes possible to detect an erosion in the roof of the tympanum or antrum leading into the cavity of the cranium. In such a case the opening is enlarged and brain abscesses have been tapped through such erosions. A large curved flap of scalp is now to be turned down from the skull behind the first incision. This is done by making a bold curved incision, starting at the upper angle of the first incision and carrying it upwards and backwards and then downwards through all the tissues of the scalp. The flap of scalp so raised is turned downwards with the periosteum covering the outer surface of the bone and the skull is freely exposed. This is carefully examined, the condition of the mastoid emissary vein, whether patent or thrombosed, is noted and the various bony sutures and landmarks are clearly defined. The angle of junction of the posterior inferior angle of the parietal bone with the squamous and mastoid portions of the temporal bone is particularly noted. The junction of the sutures is quite easily defined on the bared skull and is an important landmark. A line drawn from it to the tip of the mastoid process marks out fairly accurately the course of the sigmoid portion of the lateral sinus as it passes downwards towards the jugular fossa; a trephine should never be applied in this line as the bone at the bottom of the groove is occasionally very thin.

The dura mater and brain above and in front of the sinus are first of all to be explored. To do this a crown of bone one inch in diameter is removed with a trephine. The centre pin of the trephine is placed—in the adult—over a point one and a quarter inches above and one and a quarter inches behind the centre of the external auditory meatus. The trephine is applied in the usual manner, and personally I prefer a trephine worked by hand in preference to any of the machine-driven or electrically driven instruments. The opening thus made in the skull is rapidly enlarged in a direction downwards and forwards with Hoffmann's bone forceps (taking care before each application of the forceps to separate the dura mater from the under surface of the skull) until the opening is continuous with that already made for cleansing the antrum. In this way there is practically no risk of inadvertently wounding the wall of the sinus, however thin the skull may be. If the collection of pus be an epidural one—that is to say, between the dura mater and the bone—the rest of the operation is quite simple. The pus is evacuated and the cavity is thoroughly cleansed and irrigated with some mild antiseptic. Particular care should be taken in these cases to see that suppuration has not extended along the diploë, between the two tables of the skull, as it is very apt to do. If it has done so the affected portion of the skull should be removed. When pus is not encountered outside the dura mater the condition of that membrane is to be noted carefully. Increased tension and absence of visible pulsation usually point to a diffuse lepto-meningitis beneath or to a localised cerebral abscess. The surface of the dura mater is occasionally found covered with unhealthy granulation tissue, particularly immediately over the sinus. By careful palpation it is sometimes possible to detect that the sinus is thrombosed owing to its feeling of solidity.

The next step in the operation is to explore the brain above the tentorium for pus. This may be done quite easily and thoroughly without at first opening the dura mater. The needle of an exploring syringe is passed through the dura mater into the brain substance at a point one inch above and one inch behind the osseous external meatus. It is thrust in a direction downwards, inwards, and slightly forwards, and should be directed towards the roof of the tympanum and the upper border of the petrous bone. The needle itself should be of a good size, as if small it is apt to become choked by small portions of soft brain matter. The brain may in this way be very freely explored in many places and in various directions without apparently any permanent injury being inflicted. I have on two or three occasions drawn off fluid from the lateral ventricle in my explorations. Directly pus is reached the needle should be detached from the syringe and held firmly *in situ* as a guide while the abscess cavity is reached and drained. The dura mater is opened by a crucial incision and a pair of sinus forceps or large trocar and cannula is passed into the abscess cavity through which the pus is allowed to escape. The pus is usually extremely offensive and has the same peculiar fœtid odour which characterised the ear discharge. A small stiff rubber drainage-tube is then passed into the cavity and if the pus is very thick the abscess is irrigated with weak boric acid solution, extreme caution being observed that there is a free vent for the fluid so injected. At the end of 24 hours the tube may be removed and cleansed, but it must be very cautiously shortened and must not be removed until the patient's condition has become quite satisfactory and all discharge has ceased. The dura mater should be sutured loosely round the tube to prevent adherence of the brain cortex to the scalp when the flap is laid down. When the abscess has been a large one and the intracranial pressure great the immediate relief of the symptoms is often marvellous. The pulse almost at once rises in frequency, the respirations are deepened and quickened, and pulsation returns in the exposed brain cortex.

If the patient's symptoms point strongly to abscess of the brain and no pus is discovered after repeated exploration above the tentorium the lateral lobe of the cerebellum should be explored. An abnormally slow pulse, marked optic neuritis, rapidly failing respiration or Cheyne-Stokes's breathing, with perhaps some retraction of the head and a

history of vertigo and repeated vomiting, are the chief indications of the abscess being in this situation. To expose the dura mater covering the cerebellum more bone must be removed with the chisel or Hoffmann's forceps and the sigmoid sinus well defined.

The needle of an exploring syringe is then in the same manner as before thrust through the dura mater below the sinus about half an inch below Reid's base-line and an inch behind the bony meatus and cautiously pushed in a direction inwards and a little forwards. The pus in these cases is generally near the surface and the abscess is drained in the manner previously described. While carrying out these measures a careful watch must be kept on the respiration as it is apt to fail and artificial respiration may be called for at any moment during the operation. After the abscess has been opened and the pus evacuated the respirations usually at once become deeper and are quickened. Unfortunately, cerebellar abscess is frequently complicated by basal meningitis. The prognosis is therefore a much more grave one. My only case of cerebellar abscess proved fatal from this cause.

In cases of sinus thrombosis the same incision is made and the removal of bone is carried out in exactly the same way as before. The dura mater covering the sinus is occasionally seen covered with sloughing granulations and sometimes actual pus is found between the dura mater and the bone or even exuding from an opening in the sinus. To determine whether the sinus is thrombosed in doubtful cases after carefully palpating it the sinus should be explored with a small exploring syringe. A fine needle is employed and its point is pushed obliquely through the wall of the sinus after carefully cleansing its walls. The slight oozing which follows the needle prick can be easily controlled by gentle pressure with a piece of iodoform gauze. I have on two or three occasions thus explored it with negative results and without doing any harm.

If the sinus be thrombosed or pus be drawn from it with the needle it must be opened and its interior thoroughly cleansed. Authorities differ whether in these cases before opening the lateral sinus to cleanse it the internal jugular vein shall or shall not be ligatured in the neck. Victor Horsley, Ballance, and others advocate such ligature in all cases. If the vein be ligatured in a healthy part of its course in the neck one, and probably the chief, channel through which infective emboli can be carried into the general circulation is closed and at the same time the risk of air embolism during the actual process of cleansing the sinus is reduced to a minimum. On the other hand, its ligature adds to length and severity of the operation and fails to close the other channels of infective emboli through the inferior and superior petrosal sinuses and backwards along the lateral sinus. The vein should certainly be ligatured when there is evidence, as shown by swelling and œdema, that the thrombosis has extended into the cervical portion of the vein or where septic emboli have already begun to show signs of their presence in the lungs. When this has not occurred, personally I doubt if such ligature be necessary and in neither of my successful cases was it done. When it is decided to ligature the vein the vessel is exposed in the neck well below the thrombosed portion and where the coats of the vessel seem healthy. The vein is then ligatured in two places and is divided between the ligatures. The sigmoid sinus is then laid freely open with a sharp knife or scissors along the whole of its exposed length. The edges of the opening in the vein being held apart all the pus and breaking-down blood-clot are removed from its interior. This is most effectively done by means of small Volkmann's spoons bent into appropriate shapes. The lining membrane of the sinus is at the same time thoroughly cleansed by rubbing it with strips of gauze impregnated with a strong antiseptic solution, perchloride of mercury being perhaps the best for this purpose. A gush of blood usually denotes that all the clot has been removed. The hæmorrhage, which may at first appear alarming, is easily controlled by plugging the interior of the sinus with narrow strips of iodoform gauze or an antiseptic wax, such as that introduced by Horsley. Personally, I prefer the use of gauze which I remove gradually on the fourth day.

The wound must in these cases be freely drained. It should be dressed daily and irrigated with some antiseptic such as perchloride of mercury. If systemic infection have not already taken place before the operation the prognosis is usually good and the patient may even recover a certain amount of hearing. But when the lungs have already become studded with infected infarcts the prognosis is an extremely grave one. All that can be done is to support the patient's strength and generally the free use of stimulants is required.

General septic meningitis when arising as a complication of middle-ear disease almost invariably proves fatal. Exploratory operation is usually undertaken chiefly in the hope that the diagnosis may possibly be a mistaken one and that abscess or septic thrombosis may be met with. When the dura mater has been opened and free drainage of the subarachnoid space obtained the symptoms abate and the coma lessens frequently for a time. But the fatal issue is rarely if ever averted. An exploratory lumbar puncture should be undertaken as a means of diagnosis in doubtful cases and cultivations made from the fluid so obtained. Antiseptic irrigation of the subarachnoid space combined with lumbar drainage holds out a possible means of cure for such cases in the future. Halstead has recently made such an attempt but it proved unsuccessful.

In conclusion, I will briefly epitomise my own experience in this branch of surgery. Apart from my mastoid operations, which now run into their second hundred, I have had in my own practice 16 cases of intracranial suppuration of which the following is a brief epitome.

A. *General septic lepto-meningitis.*—Four cases, all of which proved rapidly fatal. In only one of these cases was any operation performed. The patient was a male, aged 18 years, who was admitted to hospital comatose with right hemiplegia. A trephine was applied over the left temporo-sphenoidal lobe, the dura mater was opened, and general meningitis was found. He died four hours after. In one of the other three fatal cases a temporary relief of some of the more urgent symptoms was obtained by a lumbar puncture to release the excessive cerebro-spinal pressure. The fluid so obtained gave a luxuriant growth of staphylococcus pyogenes aureus.

B. *Localised suppuration between the dura mater and skull.*—Three cases, all of which recovered. One of these cases was reported in the *Provincial Medical Journal* for May, 1894. The abscess in this case discharged itself through an opening in the roof of the tympanic attic. In both the other cases—all these cases were children—it was found on opening the mastoid antrum that its posterior wall was eroded and on removing a crown of bone from the skin behind a cavity was found full of pus and surrounding the sigmoid sinus in its groove.

C. *Cerebral abscess.*—Six cases with four recoveries and two deaths. In two of these cases the abscess was in the frontal lobe and followed, not middle-ear disease but an injury to the skull. These two should not, therefore, strictly speaking, have been included in the list. I have done so, however, to make my table a complete one.

CASE 1.—The patient was a boy, aged 12 years. An abscess followed some two months after injury to the skull, three inches deep, in the frontal lobe. Two ounces of pus were evacuated. The patient made a good recovery with some slight right facial paralysis.

CASE 2.—The patient was a boy, aged eight years, who had had a small compound depressed fracture over the left parietal eminence some weeks previously. The symptoms suddenly set in seven days previously with twitchings of the right side of the face and right arm and unconsciousness. The dura mater was exposed over the motor area on the left side and an abscess containing two drachms of pus was tapped about half an inch from the cortex. A good recovery followed.

CASE 3.—The patient was a male, aged 25 years. He had had left otitis media for many years. Sudden onset of the symptoms occurred five days previously. Intense headache and partial unconsciousness with sensory aphasia were present. At the first operation a large collection of pus was localised and tapped between the dura mater and the petrous bone. Two days later he had become quite comatose. His temperature was 103° F. and his pulse was 55. The dura mater was opened above the tentorium and an abscess at once burst through the thinned cerebral cortex and discharged about six drachms of sanious pus. The probe entered one and a half inches into diffluent brain tissue. His condition improved somewhat for 48 hours but he then gradually became more and more unconscious, his temperature remaining persistently high. The post-mortem examination disclosed a state of acute encephalitis of the whole brain.

CASE 4. *Abscess in the right lobe of the cerebellum; trephining and evacuation, death from meningitis.*—The patient

was a girl, aged six years. She had had middle-ear disease for several years. The acute symptoms had begun ten days previously. The mastoid antrum had been opened and drained six months previously. The main symptoms were intense pain in the head, chiefly in the occipital and right temporal regions, almost incessant vomiting, and marked optic neuritis. The temperature was subnormal, the pulse was 70, and the patient was in a state of semi-coma. There were no retraction of the head and no history of vertigo. The child was trephined and the brain and dura mater were explored in several places with a needle with negative results. The dura mater was then opened below the sinus and an abscess containing three drachms of green offensive pus was evacuated. The child did well for ten days and then suddenly developed symptoms of general septic meningitis. The post-mortem examination revealed a general septic meningitis of the base of the brain. The abscess had burst into the fourth ventricle.

CASE 5. *Temporo-sphenoidal abscess, complicated by infective thrombosis of the lateral sinus; operation; recovery.*—The patient was a man, aged 30 years. He had had pain in the right ear and right side of the head for nine weeks before admission to hospital. During the last 18 days he had been occasionally delirious. He had occasional rigors and vomited at irregular intervals. On admission his temperature was 102° F. and his pulse was 86. He was in a state of mild delirium but could be roused at times, though he quickly relapsed into a drowsy condition. There was marked optic neuritis. The mouth was dry, the tongue was covered with a thick brown fur, and the breath was extremely fœtid. The bowels were constipated. The urine was voided unconsciously. There was no muscular paralysis. Two days afterwards his temperature had fallen to 97·8° and his pulse to 60 and the unconsciousness had deepened. An operation was performed. The antrum was first of all opened and cleansed. A large area of bone was thus removed and the dura mater covering the cerebrum, the sigmoid sinus, and the cerebellum was exposed. The sinus was completely thrombosed. It was laid open freely and a quantity of breaking-down blood-clot was removed from it. The hæmorrhage from it was only slight and was easily controlled by plugging with gauze tampons. After this operation the patient's condition improved somewhat for a time. But five days later coma became absolute, his temperature fell to 97°, and his pulse to 56. A second operation was performed and the brain was explored with the needle of a syringe in many places both above and below the tentorium. An abscess cavity was at length tapped at a depth of two and a half inches in the situation of the angular gyrus and one and a half ounces of extremely offensive sanious pus were evacuated. The cavity was drained and gently irrigated. He made a rapid and uneventful recovery and has remained in perfect health since. The pus when inoculated on to agar produced an opaque film which consisted of a pure growth of short, thick bacilli, freely mobile. They were decolourised by Gram's method.

CASE 6. *Cerebral abscess in the right temporo-sphenoidal lobe; operation; recovery.*—The patient was a girl, aged 19 years. She had had purulent otorrhœa since the age of six years, when she had scarlet fever. One month before admission she began to complain of right-sided headache. She had at the commencement of her illness two shivering fits and suffered much from sickness. On admission she was in a state of semi-coma. The temperature was 100·2° F. and the pulse was 96. There was a slight right-sided facial paralysis. There was no optic neuritis. Both pupils were sluggish, the right being always rather larger than the left. She was trephined. The antrum was thoroughly cleansed and the dura mater covering the cerebrum, the sinus, and the cerebellum was thoroughly exposed. In doing so the sinus was accidentally opened and had to be plugged with gauze. Her condition was not materially improved by the operation. Five days afterwards the coma had deepened and she was rapidly emaciating. The temperature had fallen to 99° and the pulse to 68. A second operation was performed and an abscess was tapped in the right temporo-sphenoidal lobe three-quarters of an inch from the surface. Two ounces of fœtid pus were evacuated and the cavity was drained. The patient made a slow recovery. The pus re-accumulated in the abscess cavity several times and fresh tubes had to be put in, but eventually she made a complete recovery. She occasionally suffers from headache and is not very strong. The pus contained a similar organism as the last case.

C. *Infective thrombosis of the lateral sinus.*—Three cases—one death and two recoveries.

CASE 1. *Septic thrombosis of the lateral sinus; operation; death from multiple embolic abscesses in the lungs.*—The patient, a boy, aged six years, was operated upon in March, 1895. He had had scarlet fever two years previously and a discharge from both ears ever since, the discharge being always worse from the right ear. For several months he had been subject to feverish attacks accompanied by violent headache, vomiting, and constipation. These attacks had been put down to biliousness. Four days before admission he complained of great pain on the right side of the head and right ear. An abscess formed behind the ear the day before admission. On admission he was a bright intelligent boy. There was a large abscess behind the right ear pushing it forwards and downwards. The temperature was 100·8° F. and the pulse was 96. There was a profuse fœtid discharge from both ears. He had a rigor on the night of admission, the temperature being as high as 105·4°. He was anæsthetised, the abscess behind the ear was opened, and the mastoid antrum was opened and thoroughly cleansed. His general symptoms improved but he had a rigor on each of the following days. Marked optic neuritis also developed and some swelling appeared below the mastoid process in the neck. On the third day after the previous operation he was trephined. The mastoid antrum was opened and cleansed; the lateral sinus was found plugged with breaking-down puriform blood-clot. The internal jugular vein was exposed in the neck and divided between two ligatures. The sinus was then thoroughly cleansed until free hæmorrhage occurred from its upper and lower ends. It was then firmly plugged with iodoform gauze. After the operation he had no more rigors, but four days afterwards signs of consolidation appeared in both lungs and he died from septic broncho-pneumonia on the eighth day after the operation. The post-mortem examination revealed pyæmic abscesses scattered through the lungs. The internal jugular vein below the ligature was healthy; above it was filled with breaking-down blood-clot. The brain itself was healthy.

CASE 2. *Right-sided cerebral abscess and infective thrombosis of the lateral sinus; operation; recovery.*—The clinical details of this case have already been given under the head of Cerebral Abscess. A point of interest in the case was the discovery of the same mobile bacillus in the breaking-down blood clot removed from the sinus as was afterwards discovered in the pus from the cerebral abscess. The patient has since remained in excellent health and now—some three years since the operation—is in full work.

CASE 3. *Infective thrombosis of the left lateral sinus; operation; recovery.*—The patient was a man, aged 31 years. He had double otitis media for many years. For two months he had complained of pain and tenderness of the left side of the head. During the week before admission he had had almost daily rigors with sickness and excruciating pains in the head. On admission he was in a semi-conscious state, rolling about in agony from headache. There was complete anorexia with occasional sickness. The temperature was 103·4° F. and the pulse was 118. There was no optic neuritis. The bowels were constipated. The left ear and left side of the head were very tender. There was one spot behind the pinna over the exit of the mastoid emissary vein where the tenderness was exquisite. At the operation the bones of the skull were found enormously thickened and sclerosed. The mastoid antrum was opened and cleansed. The dura mater was exposed after removing portions of skull in some places three-quarters of an inch in thickness. The sinus was found completely solidified. It was opened and broken-down blood-clot was removed. It was then thoroughly cleansed and wiped out with a strong solution of mercuric iodide and packed with iodoform gauze. The jugular vein was not ligatured. The patient made an uninterrupted recovery.

Birmingham.

THE BARKER ANATOMICAL PRIZE.—This prize of 30 guineas, offered annually and open to all students in any medical school in the United Kingdom, has just been awarded to Mr. Charles Cooper, a student in the Royal College of Surgeons, Dublin. This is the fifth year in succession that this open prize has been conferred on students of a Dublin College.

A CASE OF MULTIPLE SARCOMA.

BY SEYMOUR TAYLOR, M.D. ABERD., F.R.C.P. LOND.,
PHYSICIAN TO THE WEST LONDON HOSPITAL.

A MAN, aged 32 years, was sent to consult me on Jan. 7th, 1904, by Mr. F. E. Streeten of Swindon. The patient was in his usual good health until the previous July, when he noticed a "lump" in the abdominal wall which appeared "to have sprung up suddenly in the night." It was unattended by pain. A few days afterwards he complained of cough which had continued up to the time when I saw him but which had not been attended by haemoptysis, or expectoration, or night sweats, although he had lost flesh considerably. Since then numerous similar "lumps" had appeared all over the trunk, back and front. There was no history of syphilis. His parents were both living and healthy and there was no family history of tuberculosis. There was no history of any previous extensive disease of the skin but a slight patch of eczema had existed over the inner left ankle for some months.

The patient was admitted into the West London Hospital and on examination he was found to be a well-made man, somewhat pallid and emaciated. When he had removed his shirt some tumours were noticed in the skin over the scapular regions. In appearance they gave one the suggestion that they were sebaceous cysts. But further examination failed to discover their porous outlets and, moreover, their consistence on digital examination pointed to their being subcutaneous new growths. On examining the front surface of the body an extraordinary condition of affairs was presented. Scattered over the abdomen and thoracic walls were a number of solid tumours, varying in size from that of a Tangerine orange (which was the first tumour the patient had noticed) to that of a large pea. The large growth was situated in the right side of the abdominal wall midway between the anterior superior iliac spine and the umbilicus, though slightly above this horizontal line. Its surface was red and granular in appearance, looking as though it was ulcerated; but there was no discharge or "weeping" of any kind, although yellowish scales of necrosed epidermis appeared between the granular nodules. On the opposite side of the abdominal wall in the corresponding site there was almost a similar lesion, the difference being that two contiguous tumours occupied the space filled by the tumour in the right side, while symmetrical growths were seen to exist between the larger ones described above and the nipples. Both mammæ were indurated and involved with the neoplasm, the skin, however, in these localities being as yet intact. Similar nodules, though not well seen in the illustration, were found in the skin over each fourth costal cartilage, and when one traced these various growths they gave one the impression of a circular outbreak which involved the abdominal wall principally, but also the lower zone of the thorax to a lesser degree. This configuration, however, could only be accidental, as other tumours were found within this zone, and I know of no condition of vessels, whether appertaining to the circulatory or to the lymphatic system, which could give origin to this annular arrangement of the tumours. Other similar growths, though not so large, only two or three being of the size of nutmegs, were found over the front of the upper chest. The lymph glands of the groin were indurated and matted together but the skin moved easily over each mass. The glands of the axillæ were similarly affected though to a less degree. Those of the neck were unaffected.

The skin was fully moveable over each tumour and was not involved over the smaller ones, but over those which had attained a large size corresponding to the bulk of a pigeon's egg the skin was reddened and glazed, whilst the superficial veins stretching over them were engorged and slightly varicose. In those which were more advanced, as in the largest tumour first described, the surface was red and granular, with necrosed epidermis scales in the fissure between the tubercular outgrowths, but there was no moisture or exudation.

Similar tumours were found on the dorsal aspect of the trunk, especially on the left scapula, but in none of them was the skin reddened or abrased.

The chest was slightly "barrel" shaped. The percussion note over the upper lobe of the right lung was somewhat impaired both back and front and there were signs of deficient air entry to this region. Fine crepitations were heard over the right apex posteriorly and the expiratory murmur over the whole of the upper lobe of this lung was prolonged and blowing. The physical signs in the other regions of the respiratory tract were healthy. In addition the patient had marked inspiratory stridor. There was slight frothy expectoration but no tubercle bacilli were discovered. A laryngoscopic examination kindly made for me by my colleague Dr. J. B. Ball showed that there was no paralysis of the vocal cords and nothing could be seen to account for the inspiratory stridor.

A case of multiple sarcoma.

The heart sounds were normal. The liver extended almost to the umbilicus and the lower part of its anterior surface could easily be felt—it was hard, nodular, and somewhat tender to the touch. The bladder and prostate gland were healthy. No evidence of ulceration or of new growth could be discovered by rectal examination. The urine was free from albumin and sugar and was quite normal in specific gravity and reaction. The bowels acted regularly. The patient complained of slight dyspnœa and cough which prevented him from sleeping and for which a linctus containing opium was prescribed.

The question of diagnosis at first was difficult to decide. The disseminated character of the growths and their rapid invasion made one think of mycosis fungoides but the absence of a history of previous extensive skin disease (although a slight eczematous patch was still to be seen over the inner side of the left ankle) and the dryness of the surface of the tumours led one to reject this diagnosis.

Acting on the supposition that the disease might be tuberculous and pending a microscopical examination of the

tumours, shortly after admission half a grain of sodium cacodylate was injected subcutaneously twice a day. This caused pain in the tumours generally and this reaction continued so long as the injections were being made. But the sudden onset of the disease, its rapid spread and wide dissemination, and the secondary affection of the respiratory tract, which was proved to be non-tuberculous, all tended to the diagnosis of sarcoma. Meanwhile, in order to settle a definite diagnosis one of the smaller and less advanced growths was, with the patient's consent, excised, and after being duly hardened it was prepared for, and examined by, the microscope. The evidence which this afforded proved that the growths were those of sarcoma of the small round-celled variety. An unfavourable prognosis was given and the patient shortly afterwards expressed a wish to go to his home in the country.

By the courtesy of Mr. Streeten I have heard that the patient died towards the end of February, seven months after the first signs of the disease were noticed. "The only fresh symptom which he had was urgent dyspnœa in paroxysmal attacks, one of which proved fatal. No autopsy was allowed, though the patient expressed a wish that one should be made."

Seymour-street, W.

A CASE OF ACUTE ARSENICAL POISONING.

BY R. E. SEDGWICK, B.A., M.B., B.C. CANTAB.,
LATE SENIOR HOUSE PHYSICIAN AT THE GENERAL HOSPITAL, BIRMINGHAM.

DEATHS from acute arsenical poisoning are sufficiently rare to make the notes of such a case and of the subsequent post-mortem examination of interest and value.

On March 24th, 1903, at 5.30 A.M., I was called to see a man reported as "very ill and almost dying." On arrival at the house, 20 minutes later, I found the patient on his bed, dead. He was lying on his back with his left knee drawn up and his arms extended. His hands and feet were cold, as were also his nose and face, while his body was warm. He was well developed and well nourished but his eyes were sunken far in their sockets and a general pinched expression on his face gave him an appearance such as is frequently seen in a child with epidemic diarrhœa. The room was poorly furnished but clean; there were no signs or traces of vomited matter or fæces either in the chamber (which was empty) or about the floor and bed. On the dressing table was a glass mineral-water bottle containing about two drachms of slightly milky fluid.

The history obtained was as follows. The patient, who was a labourer at a glass-works, had always enjoyed good health. On March 23rd he was quite well, had his breakfast with the rest of the family (who were well), and went to work. He returned home about 2.30 P.M. and vomited in the entry, stating that he was "bilious." He continued to retch and to vomit and was then given a bottle of "ginger beer," after which he seemed more comfortable and dozed on the sofa. Shortly afterwards he had great abdominal pain, was violently purged, and again sick. He continued to be purged and sick until about 8 P.M., when he went to bed but without relief. As he became so weak he was asked to see a medical man but declined, stating that "he didn't want one as he was going to die." At 5 A.M. on the next morning he became so "bad" that I was sent for. All inquiries led to no elucidation of the mystery and the body and the bottle of "mineral water" were removed to the mortuary by the police and the facts were duly notified to the coroner.

Necropsy.—On March 26th, two days later, I made a post-mortem examination of which the following are the notes. The body was that of a well-developed, well-nourished man, aged about 32 years, height 5 feet 9 inches. It had been in the mortuary two days (48 hours). The weather was mild and damp. The eyes were markedly shrunken in the sockets and the face had a pinched expression. No putrefactive changes were visible and there was no post-mortem rigidity. Slight venous congestion was visible on the buttocks. There were no external marks of violence. The coverings and bones of the skull were normal. The brain showed no venous hypostasis and the membranes were dry. The brain substances were normal; there were no hæmorrhages or ecchymoses. The ventricles were dry; on section they were drier and firmer than normal. The lungs were dry and crepitant; there was no posterior hypostasis. At the apex of the right lung was an old scar which was white and contracted. The pleuræ were normal; there were no adhesions. The left cavities of the heart were empty. There were about half an ounce of blood in the right auricle and a little clotted material in the right ventricle; otherwise the heart was normal. The tongue was clean at the tip and sides; it was slightly furred at the back. The pharynx and œsophagus were normal; no redness or hæmorrhages were present. The stomach contained about a pint of yellow turbid fluid in which were floating several large, whitish-yellow, opaque masses. Some mucus settled on standing in which were a few green-coloured particles. The external wall of the stomach was pink in colour except for about two inches along the pyloric third of the greater curvature where it was of a dusky scarlet colour. The mesenteric glands along the greater curvature were enlarged to sizes varying from that of a bean to that of a Brazil nut and were soft, cherry-red in colour, and on section almost diffluent. Internally the mucous membrane of the stomach was thrown into folds and was generally reddened and covered with a thin layer of slimy mucus. In five or six places were patches of ecchymoses and petechiæ, chiefly lying along the greater curvature and the posterior wall, while in three places were adherent, whitish-yellow, opaque masses, surrounded by an area of scarlet-coloured and reddish-brown membrane, the largest and firmest of which corresponded to the scarlet-coloured patch on the outer wall of the greater curvature. There were no traces of food nor was there any characteristic odour. The duodenum in its first two parts was coated with slimy mucus and of brilliant red colour internally, the redness on close inspection being due to minute petechiæ. The outer covering was bile-stained and reddened. The third part together with the jejunum was completely empty except for the mucus which, indeed, lined the whole of the intestinal tract. The ileum in its lower 12 inches was slightly reddened and on one spot about eight inches above the ileo-cæcal valve was a small crater-like ulcer of the size of a pea with a smooth base and a ragged, vivid scarlet edge. Two of the neighbouring glands were swollen, soft, and red. The large intestine was empty; there was no trace of ulceration. The liver was normal in appearance; it was dry on section. The gall-bladder was empty. The pancreas and spleen were normal. Both kidneys were normal in appearance. The capsules stripped easily. The kidney substance was apparently healthy on section. A few rather bright red points of congestion were visible at the ends of the pyramids. The bladder was empty.

An inquest was held but was adjourned pending an analysis of the stomach contents, &c. At an adjourned inquest held on April 28th inquiry elicited that the man, an agent for an insurance society, was in monetary difficulties and had been threatened with legal proceedings. He had also been seen standing near a barrel of ready-mixed "frit" (which contained arsenic) at the works about 11.30 A.M. He also vomited about noon and once or twice between noon and 1 P.M., when he left work.

Mr. H. Silvester, public analyst of the county borough of West Bromwich and Dudley, reported as follows:—

1. *Contents of stomach.*—One pint. Arsenic was present to the extent of 2·17 grains, expressed as arsenious anhydride (As_4O_6).

2. *Portion of liver* (weight eight and a half ounces).—The portion of liver contained arsenic equivalent to 0·45 grain of arsenious anhydride.

3. *Left kidney* (weight six ounces).—The kidney contained arsenic equivalent to 0·07 grain of arsenious anhydride.

The total amount of white arsenic found was as follows: Stomach contents, 2·17 grains; liver (portion of), 0·45 grain; and left kidney, 0·07 grain; total, 2·69 grains.

Carlisle.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on July 14th. In the absence of the President Dr. Blair was voted to the chair. After the ordinary business a paper was read (illustrated by lantern slides) by Mr. Robert Jones on Injuries about the Elbow-joint. The paper and the illustrations were very interesting and a discussion followed in which the following members took part: Dr. White, Dr. Rees, Mr. Brady, Mr. Bowen, Mr. Graham, and Dr. Blair A cordial vote of thanks was unanimously accorded to Mr. Jones for his paper.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF TRAUMATIC PNEUMOTHORAX WITH SLIGHT SYMPTOMS.

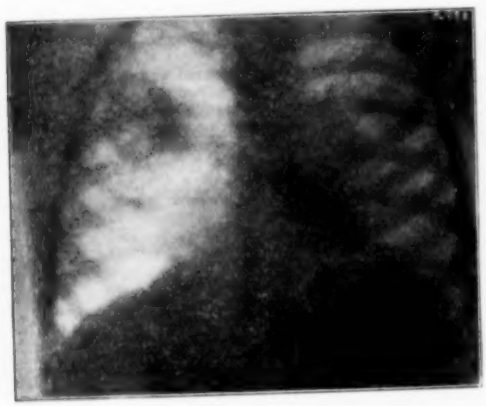
BY R. STANLEY TAYLOR, B.A.,
ROENTGEN RAY ASSISTANT AT CHARING CROSS HOSPITAL.

THE patient, a boy aged six years, was taken to the hospital on Feb. 16th, 1904, with the history of having been knocked down and run over by a cab. There were a large scalp wound over the left occipital region and a superficial abrasion over the anterior ends of the right fifth and sixth ribs and costal cartilages, which were also somewhat tender on palpation but no definite evidence of fracture could be discovered. His respirations were a little laboured, varying from 36 to 40 to the minute; his colour was perhaps a trifle dusky and he had an occasional dry cough.

The chest was not carefully examined at the time of admission but on the second day after the injury, when the first skiagram was taken, examination of the chest showed on the right side practically no expansive movement, very much diminished tactile fremitus, hyper-resonant percussion note everywhere, that below the clavicle being particularly tympanitic, and weak breath sounds of an amphoric quality. A satisfactory bell note could not be obtained. The left lung was normal. The apex beat was situated in the nipple line in the fourth space and cardiac dulness extended from this to the left sternal border, the heart being little, if at all, displaced. The heart sounds were normal.

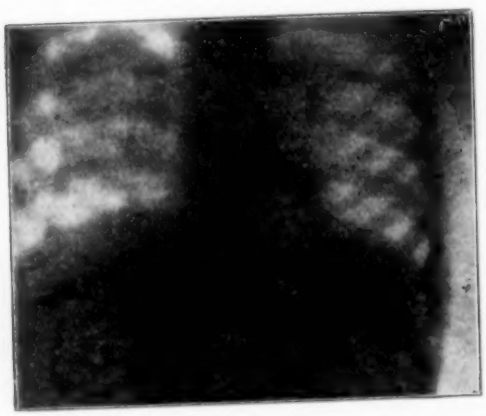
A skiagram taken on Feb. 24th (Fig. 1) showed the whole of the right chest to be abnormally transparent to the rays with the exception of an area of the size of a Tangerine orange opposite the second and third spaces, presumably caused by the collapsed lung. The symptoms disappeared in a few days and he, except for his head injury, did not appear to have anything wrong. The lung, however, took a considerable time to expand, although a definite increase in its size was shown by a skiagram taken on March 10th (Fig. 2). A third skiagram taken on March 22nd (Fig. 3) showed the lung to have expanded over the whole right side of the chest and the normal physical signs were restored. The patient was discharged quite well on March 24th.

FIG. 1.



Skiagram showing appearance caused by collapsed lung.

FIG. 2.



Skiagram showing lung to have increased in size.

FIG. 3.

Skiagram showing expansion to have been restored.

The case is unusual in being one of traumatic origin, involving total collapse of the lung, but in which the concomitant symptoms were comparatively slight. The absence of any definite signs of fracture suggests the possibility of the condition being produced solely by rupture of the visceral pleura.

The x rays proved a valuable adjunct in diagnosis and the subsequent expansion of lung and absorption of air from the pleural cavity formed interesting subjects for the second and third skiagrams.

I am indebted to Mr. J. H. Morgan for permission to publish the notes of the case.

Charing Cross Hospital.

NOTE ON A CASE OF CÆSAREAN SECTION FOR RENIFORM RACHITIC PELVIS.

BY J. B. C. BROCKWELL, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT MEDICAL OFFICER, POPLAR AND STEPNEY SICK ASYLUM.

A MARRIED woman, aged 22 years, a primipara, was admitted into the Poplar and Stepney Sick Asylum under my care on June 25th, 1903, at 4.30 A.M. Labour had commenced at about 6 P.M. on the previous evening, but the pains had ceased shortly before admission. On examination the patient was very short in stature (4 feet 3½ inches); the tibiæ were short and very curved with the convexity forwards; there was marked scoliosis with a dorsal curve the convexity of which was to the right; and the sacrum was depressed leaving a marked depression between the ilia. The external pelvic measurements were as follows: (1) distance between the anterior superior iliac spines, 10½ inches; (2) distance between the widest points of the iliac crests, 11 inches; and (3) external conjugate, six inches.

The diagonal conjugate measured three and one-sixth inches, making a true conjugate of two and a half inches at the most and probably less. On a further examination per vaginam the promontory of the sacrum could be felt forming a projection encroaching on the space of the pelvic brim. The os uteri could only be reached with difficulty and was of about the size of a shilling and the fœtal head could with difficulty be made out above the brim.

As there had been no return of the labour pains and as the os was quite small it was decided to leave the patient to get a few hours' sleep. I saw her again at 10.30 A.M. when the pains had just recommenced, the os had further dilated, and a long bag of membranes was protruding through the os, whilst the fœtal head was still above the brim. The patient was then told that the treatment rested between embryotomy and Cæsarean section and the possibilities and risks of each were pointed out to her. She said that she would prefer to have a living child if possible but that she would leave the matter entirely in my hands.

Later A.C.E. mixture was administered and on passing the whole hand into the vagina the promontory of the sacrum was felt to make a much greater encroachment on the pelvic space than was at first thought, and the fœtal head was estimated to be considerably larger than is usual. Having ascertained that the fœtus was alive it was decided to perform Cæsarean section at once. Sänger's operation was chosen. The placenta was situated in front and was wounded when the uterine wall was incised but by passing the hand rapidly down a male fœtus weighing seven and three-quarter pounds was extracted by the neck without any difficulty; the placenta was then rapidly peeled off and all hæmorrhage ceased.

Both mother and child did very well except for some vomiting and severe pain during the first two days on the part of the mother, for which it was found necessary to give morphine, making an uninterrupted recovery, and were discharged on July 31st.

NOTE ON A CASE OF CUT-THROAT.

BY THE RIGHT REV. J. E. HINE, D.D. OXON., M.D. LOND., BISHOP OF ZANZIBAR.

NOT long since I sent notes of a case of abnormal delivery which the Editors of THE LANCET were good enough to insert. Here is another example of the vital energies of primitive man when still unspoilt by modern civilisation. The history of the case is rather vague, but apparently the patient was living by himself in a small village near Magila in German East Africa. During the night a stranger entered the hut and without any apparent reason cut the throat of the sleeping inmate. I happened to be in the neighbourhood and the chief sent for me about 12 hours after the wound was inflicted to see if I could do anything for the relief of the victim. When I reached the place I found a strong young man with a deep and extensive wound across the throat just above the larynx. The air passages were not injured but there had been a great deal of hæmorrhage, though the wound did not involve any of the larger vessels. The patient was much exhausted and some oozing of blood was still going on. Native medicines had been applied and I removed a quantity of black gritty material, which looked like charcoal, with which the wound had been packed. Several vessels had to be tied and the wound, after having been cleaned as far as possible, was closed with a few sutures and dressed with antiseptic gauze. Treatment of any further kind being impossible in the circumstances I told the people to carry the man to our nearest mission station, a distance of some eight miles, where he could be properly looked after by the nurses resident there. This they did the same night, carrying the patient on a native bedstead. The road is very hilly and rough and the jolting caused a recurrence of hæmorrhage, so that he arrived in a state of great prostration. The nurses attended to him according to my directions which followed the usual lines for the treatment of such cases. The man kept quiet during the day, but that same evening the schoolboys happened to be holding a native dance in the quadrangle adjoining the room where the patient was lying. It appears that he was a famous dancer and the sound of the drumming so excited him that, cut-throat whether or no, he could not refrain from getting up and in a few minutes he was in the midst of the crowd dancing his hardest, as though nothing of a serious nature was wrong with him. A native African dance involves bodily exercise of considerable vigour and it was not surprising that after a time the hæmorrhage returned. But the patient (if that is the right term to use of such a person) notwithstanding went on at his work closely followed up by his nurse who was making efforts to recapture him, until at length he fell down in a semi-fainting condition and was carried back to his bed. I saw him on the next day on my return and found him surprisingly well. The wound healed up rapidly and in about a fortnight he was able to go home.

In the days of my youth one of our professors used to tell us that under certain conditions we should do well "to follow the expectant method of treatment," and perhaps "combine it with the exhibition of a placebo." This is the finest description of how to do nothing that the therapeutic mind ever conceived. In Africa it is an excellent method to follow. The expectancy is all on the side of the surgeon as you never know what your patient may choose to do next. And the "placebo" is what the patient pleases rather than his medical attendant. A wise combination of the double method is a sure way to fame if not to fortune.

Zanzibar.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF SEPTIC MENINGITIS AND HERNIA CEREBRI FOLLOWING COMPOUND FRACTURE OF THE SKULL; RECOVERY.

(Under the care of Mr. R. T. H. BUCKNALL.)

A BOY, aged 16 years, was on Dec. 30th, 1901, thrown from a runaway horse and pitched head foremost against a rough-hewn stone wall. He sustained a compound depressed fracture of the skull in the left parietal region and remained unconscious for 19 hours. Portions of bone and damaged brain were extracted from the wound soon after the accident and a small dressing was fixed on with strapping. 30 hours after the accident he arrived at University College Hospital and was admitted.

On examination the temperature was 101° F. and the pulse was 135 and bounding. The patient lay curled up on his left side, in a drowsy state, with limbs flexed and eyes tightly closed. On being roused he would occasionally answer rationally but he usually responded to any interference or questioning by cursing, struggling, and striking out at those who examined him. His condition was typically one of marked cerebral irritation. The right pupil was slightly smaller than the left. There was no paralysis or anæsthesia anywhere. On removing the dressing a ragged and extremely dirty stellate wound of the scalp was exposed, the hair all round being matted with dirt and blood. The wound was about one and a half inches in its longest diameter, which ran obliquely forwards and upwards just below the parietal eminence. In the middle of the gaping wound fragments of bone and disintegrated brain tissue could be detected.

The head was shaved under an anæsthetic; the scalp wound was then found to lie three inches from the saggital suture and three inches behind a vertical line drawn upwards from the anterior margin of the external auditory meatus. After cleaning the scalp a flap was turned down with the wound at its centre, so as to lay bare most of the lower part of the parietal bone in its posterior half. A much depressed and comminuted area of bone was thus exposed one and a half inches long by one inch in breadth, with a hole admitting the end of the thumb, about its centre, through which brain substance was exuding. From the anterior extremity of the

depressed area a fissure ran directly forwards across the exposed portion of the parietal bone and apparently continued beneath the unreflected scalp. On removing the whole of the depressed bone, which was much fissured and very grimy, a hole in the dura mater one and a quarter inches long with a cross tear from its centre half an inch long was found. On enlarging this aperture bone and dirt were evident in the lacerated and bloody brain tissue beneath. It was then found that a considerable quantity of blood was lying between the dura mater and bone and also between the dura mater and brain in front of the point of injury and along the line of the fissured fracture in the parietal bone. On removing the clot free hæmorrhage ensued and the bone on each side of the fissure was chipped away, after incising and turning flaps of scalp up and down, in order to reach its source. When sufficient bone had been removed it was found that the hæmorrhage was due to tearing of the middle meningeal artery as it lay in the dura mater opposite the fissure, which crossed the artery at right angles. The ends of the meningeal artery were ligatured. All blood clot was now removed and the torn and dirty edges of the dura mater and scalp were cut freely away. All the damaged brain tissue was also freely removed. The cut margins of the dura mater were united by suture in front, the hiatus behind being left open at the seat of original injury. The scalp flap was reapplied and sutured, a gauze drain being led out of the posterior inferior angle and another out of the hiatus in the scalp, skull, dura mater, and brain resulting from the injury. Towards the end of the operation the pulse showed signs of failing but it rapidly recovered after intravenous injection of two pints of normal saline solution.

Immediately after the operation the temperature rose to 104° and the pulse to 156. Ptosis was present on the right side and the right angle of the mouth was retracted, causing the naso-labial fold to be deeper on this side (right facial spasm). During the same evening and through the night the patient was restless and delirious, continuously talking at random, shouting and spelling words, and repeating letters. No sleep was obtained in spite of bromides and morphine. There were no intervals of consciousness; the urine had to be drawn off. On the next day (Jan. 1st) he was a little quieter and would answer some questions rationally and complained of severe headache. The ptosis was less marked; the right side of the face was no longer retracted but was slightly paralysed instead, the distribution being impossible to detect with certainty. The temperature remained at 102° and the pulse at 120 throughout the day. He had not yet ceased vomiting. On the 2nd he had passed a better night but was still very restless. He became quieter during the day and the temperature fell to 99·2° and the pulse to 100 in the evening. No vomiting had occurred since the previous day. On the 3rd he was much worse. He awoke from a quiet sleep at 5 A.M. and after screaming a fit commencing in the left arm and spreading to the left and then the right side of the body was observed. During the fit the head and eyes were turned to the left and the left side of the face was contracted. The fit lasted two minutes and consisted of clonic, followed by tonic, contractions. After the fit the left arm was found to be paralysed. The patient vomited with the fit. At 8.15 and 10 o'clock on the same morning two exactly similar fits occurred but consciousness was not lost in the last one. At noon the left arm was only paralysed below the elbow and the right ptosis and right facial paresis were less marked. The patient gradually became more restless and noisy and complained of his head. The temperature varied between 100° and 101° and the pulse remained about 100. Vomiting was now frequent. The reflexes were unaltered. On dressing the wound a hernia cerebri was beginning to project through the aperture caused by the injury and a smaller one protruded through the drainage hole further back. A little pus was oozing through the suture line of the flap so that the stitches were removed and the flap was re-opened. The herniæ were washed with pure alcohol and fomentations were applied to the whole area. On the 4th the condition remained the same; the patient was noisy and semi-conscious. On the 5th the temperature rose from 102° to 105° and the herniæ were more prominent. He was even more restless and noisy, rolling about and yelling incessantly and vomiting at frequent and irregular intervals. During the 6th, 7th, and 8th the temperature varied between 103° and 105·4°, the pulse ranging from 105 to 120, and the respirations between 20 and 28. The patient remained very restless all the time but the herniæ cerebri became definitely smaller and the paresis of the left forearm and hand became less marked. The right facial paralysis and ptosis disappeared entirely. On the evening of the 8th the temperature fell to 99° and the pulse to 72. On the 9th the temperature reached 102° in the morning but fell to normal in the evening without any improvement, however, in the patient's mental condition. On the night of the 11th he slept quietly for the first time and was much better on the 12th when the herniæ were so shrunken as no longer to project beyond the skin. No vomiting had occurred since the 7th. From the 12th to the 15th improvement continued, though the temperature still shot up from 99° to 104° every morning. On the 14th advantage was taken of the patient's more calm condition to examine the eyes. The right disc was slightly ill-defined, the left was definitely swollen, and a few small hæmorrhages could be detected in the retina. From the 15th to the 20th the temperature never rose above 100° and afterwards remained normal. Meanwhile the patient gradually became quite rational and slept well, putting on flesh again very quickly. The scalp wounds were rapidly granulating and healing, and all signs of paresis in the left arm disappeared on the 18th. On the 19th the right disc was perfectly normal and the left was clearing rapidly. On the 30th the scalp was healed and he was otherwise well, but a subcutaneous abscess in the abdominal wall near the iliac spine had to be opened and drained. During the ensuing fortnight several similar abscesses formed beneath the skin in other parts. They all gave a growth of staphylococci on cultivation and appeared to be of pyæmic origin. The patient left the hospital at the end of February perfectly well. He has been seen frequently during the last three years and has had no trouble of any kind since his discharge.

Remarks by Mr. BUCKNALL.—The case is of interest for two reasons: (1) it is an example of recovery after the occurrence of symptoms indicating the presence of septic meningitis; and (2) it is an instance of the cure of a hernia cerebri.

As septic meningitis is so invariably fatal it is important in the present case to consider two questions: (1) was general septic meningitis actually present? and (2) if so, can any reason for the unexpected recovery be found?

1. The presence of typical meningitis appears almost certain on account of the character of the temperature, the fits, headache, vomiting, and delirium. It is also indicated by the transient paralysis and the presence of optic neuritis, for it is difficult to account for the combined exhibition of all these symptoms in any other way. It is just possible, however, to regard the fits and paralysis of the arm as due to the injuries just behind the right motor cortex and to regard the ptosis and facial paralysis as the result of hæmorrhage and inflammation extending to the third and seventh nerves on the right side. Even then, however, it would be difficult to assign a cause for the optic neuritis, restlessness, delirium, and vomiting or to explain the continued high temperature in spite of opening up the wound.

2. With regard to the question of recovery, the only cause that can be found for its occurrence is the very free and early drainage afforded by the large opening in the skull and dura mater which had to be made in order to cut away all damaged tissues and to reach the middle meningeal artery. From this aspect the case bears out the suggestion made by Sir Victor Horsley at the International Medical Congress at Berlin in August, 1890, that free drainage was the only treatment for meningitis likely to be successful. It may serve to encourage the adoption of this line of treatment therefore in the otherwise hopeless cases in which symptoms of meningitis have set in.

As an example of success following early interference also it may further serve to point out the advantages of laying open the skull as soon as possible, for it is well known that if septic meningitis is allowed to proceed the results of late operative interference are as disappointing as they are in septic peritonitis in similar circumstances. The advantages of a free opening of the skull and dura mater in these cases are at least two in number: 1. Such an opening tends to diminish the spread and virulence of the septic processes present by affording drainage and avoiding tension of the inflammatory products which would lead to greater local destruction of the parts and to a general rise of intracranial tension. 2. It also tends to prevent or to diminish the rise of intracranial pressure generally by opening the closed cavity of the skull and allowing a temporary protrusion of the swollen contents. In this way a dangerous rise of pressure

which would otherwise prove fatal from cerebral anæmia may be tided over.

As an instance of the cure of hernia cerebri the case also opens up the question of the correct treatment of this condition, concerning which very little information is to be found in the text-books, where the pathology of hernia cerebri is also very imperfectly accounted for.

Hernia cerebri occurs in two chief circumstances: (1) in the presence of intracranial sepsis due to meningitis, local encephalitis, or abscess; and (2) in the presence of tumours or gummata of the brain. In each instance an aperture must exist in the skull and dura mater, either as the result of a depressed fracture or the removal of bone by necrosis or operation. In tumour or gumma the hernia may occur after trephining whether the growth has been removed or not. In abscess it may form even while the abscess is draining thoroughly. In most cases, however, in which it occurs with abscess post-mortem evidence goes to show that drainage has either been imperfect or else a second unopened abscess has coexisted.

The actual causes which lead to the protrusion of the hernia are two in number: 1. In all cases there is a rise of intracranial tension, as shown by the flattening of the convolutions at the time of operation, the optic neuritis, and the gradual changes in the pupils, pulse, respirations, and temperature which occur and which are due to pressure anæmia of the brain. 2. In some cases there may also be local softening and swelling of the area of the brain which becomes herniated, rendering it more liable to become extruded. After the removal of tumours of the brain a transitory hernia may occur. It is due to the rise of general tension caused by the injury and hæmorrhage at the time of operation; and also to the congestion which may occur locally in consequence of thrombosis of adjacent cerebral veins. After the skull has been opened and a gumma found and left untouched a hernia may occur owing to the general rise of intracranial tension due to the tumour alone. It will rapidly subside, however, subsequently if potassium iodide is given, as in a case I have observed in which marked optic neuritis and a post-operative hernia due to a cerebral gumma disappeared concurrently.

In cases of cerebral abscess complicated by hernia the usual cause which leads to the formation of the hernia and prevents it from subsiding is the rise of intracranial tension resulting from imperfect drainage. The difficulty of draining such abscesses with tubes owing to their becoming blocked by the semi-diffluent brain substance in a comparatively short time is only too well known, and in such cases I should suggest making a large opening in the skull and dura mater and removing a wedge of brain substance so as thoroughly to lay open the abscess cavity and to remove its wall if possible, afterwards plugging with gauze from the bottom. In a case of temporo-sphenoidal abscess in which I adopted this treatment no hernia cerebri formed in spite of the presence of meningitis of the base. The latter affection ultimately proved fatal six days after operation, being due to a separate infection resulting from necrosis of the inner wall of the petrous bone which was the seat of advanced disease resulting from otitis.

In hernia cerebri accompanying septic meningitis and in local encephalitis due to compound fractures and other causes raised intracranial tension and local softening and œdema of the brain are both present and they both tend to produce a hernia. To prevent its formation or to lead to its subsidence the intracranial pressure must be relieved: (1) by making a large opening in the skull and dura mater; (2) by subduing the virulence of the infection, which can best be done by affording efficient drainage by means of the large opening aforesaid; and (3) by tapping the lateral ventricle, a procedure which was followed by the cure of such a hernia in a boy I observed with a cerebral abscess. The abscess was drained but symptoms persisted and a rapidly increasing hernia cerebri appeared. A fruitless search for more pus led to the ventricle being tapped and recovery forthwith ensued.

For the prevention and treatment of hernia cerebri, therefore, a free opening in the skull and dura mater appears to be necessary in all cases for the following reasons:—

1. In cases of tumour in which the tumour is removed; to tide over the subsequent period of increased intracranial tension which is liable to occur and to lead to a hernia, with dangerous pressure symptoms, if only a small opening is made.

2. In cases of tumours which cannot be removed; to relieve tension and thus to prevent the formation of a hernia and also to prevent or to delay the onset of headache, vomiting, and blindness due to optic neuritis which would all rapidly come on if nothing were done or a small opening in the skull were made.

3. In cases of abscess to provide a reasonable means of reaching and dealing with the abscess cavity while affording at the same time an outlet for the temporary rise of intracranial pressure which follows operative interference.

4. In cases of septic meningitis and local encephalitis to afford the only means of reducing the rising intracranial tension and diminishing the virulence of the septic processes present by affording free drainage and a temporary exit for the swollen intracranial contents.

The rapid cure of the hernia in the case now recorded can only be ascribed to the free drainage afforded. It is probable also that the relief of tension at this period afforded by the large aperture in the skull may also have prevented death from compression.

The questions of shaving off the hernia itself or applying lead weights or caustics to it which have frequently been discussed, and which indeed are often the chief details of treatment referred to, are of practically no importance, as the herniated mass is only the outward sign of the pressure within the skull which is the real source of danger. The mass is extracranial and it can do but little harm unless it blocks the whole aperture in the bone and dura mater and so prevents drainage, in which case the latter should be removed more widely. The recommendation to cut off the hernia to afford drainage because it only consists of granulation tissue and a very slight trace of disintegrated brain tissue is histologically correct but it is based on false surgical principles, as no better drainage is obtained and the hernia rapidly re-forms though amputated repeatedly.

QUEEN'S HOSPITAL, BIRMINGHAM.

A CASE OF RETENTION OF URINE DUE TO THE PRESSURE OF A FIBROID TUMOUR OF THE UTERUS AT THE AGE OF 25 YEARS.

(Under the care of Dr. C. E. PURSLOW.)

THE patient, a single woman, was admitted into the Queen's Hospital, Birmingham, on Dec. 16th, 1903. She stated that she was 25 years of age in the previous September. She had always enjoyed good health with the exception of a winter cough. Menstruation began at the age of 14 years and had always been regular, the last period occurring a fortnight before admission. The loss had been moderate and the periods had always been attended by pain; there had been no increase in either loss or pain lately. Three weeks before admission she found herself unable to pass urine. Mr. A. G. C. Irvine of Selly Oak was sent for and he passed a catheter; at the same time he made a vaginal examination and detected the presence of a tumour. A week later the catheter was required again and subsequently, while waiting for admission to the hospital, there were further attacks of retention of urine necessitating the use of the catheter on each occasion.

On admission the patient was a healthy-looking woman except that she had a slight dusky flush on each cheek. Examination of the chest showed that the heart was enlarged, the apex beat being displaced outwards, and that there was a well-marked presystolic thrill with a loud double mitral murmur. Nothing could be felt on palpating the abdomen but on making a vaginal examination a smooth rounded mass could be felt filling up the posterior part of the pelvis; bimanually this could be identified as a uterine tumour. The sound passed four inches in the normal direction and on the front aspect of the tumour. Uterine fibroid was diagnosed and the circumstances were held to justify surgical interference.

Operation was performed on Dec. 19th. The abdomen was opened in the middle line and the uterus and tumour were removed by panhysterectomy. The right appendages were removed but those on the left, appearing to be healthy, were allowed to remain. The patient made an excellent recovery, the wound healing by first intention and she has since returned to her situation and is now performing all her duties as formerly. There has been no further trouble with micturition.

The uterus with the tumour, after removal, weighed 1 pound 9½ ounces. The tumour was seen to be situated in the posterior wall of the uterus separated by a thin

layer of tissue from the uterine cavity, the latter being spread out over its anterior surface. Dr. Stanley Barnes, pathologist to the hospital, kindly made a microscopical examination of the tumour and reported that it was a fibromyoma, containing more unstriated muscular tissue than is usually found in those tumours.

Remarks by Dr. PURSLOW.—The noteworthy point about the case is the age of the patient. So far I have been able to discover only one recorded case in which retention of urine due to the pressure of a uterine fibroid has occurred at so early an age and that is mentioned by Dr. C. J. Cullingworth in a paper entitled "An Analysis of 100 Cases of Uterine Fibromyoma," which appeared in the first volume of the *Journal of Obstetrics and Gynæcology of the British Empire*.

As regards treatment all authorities are agreed that repeated attacks of retention of urine due to the pressure of a uterine fibromyoma are an indication for surgical interference. Hysterectomy was performed in this case as the situation of the tumour and its relation to the uterine cavity appeared to contra-indicate myomectomy.

I am indebted to Mr. Irvine for kindly supplying some of the notes of the case and to Mr. E. L. Clay, obstetric house surgeon, for valuable assistance in its treatment.

Reviews and Notices of Books.

Handbuch der Allgemeinen und Lokalen Anæsthesie für Aerzte und Studierende. (Handbook of General and Local Anæsthesia for Practitioners and Students.) By Professor F. Z. DUMONT of Berne. With 116 illustrations. Berlin and Vienna: Urban and Schwarzenberg. 1904. Pp. 234. Price 7 marks.

Die Chloroform und Aethernarkose in der Praxis. (Chloroform and Ether Narcosis in Practice.) By Dr. KOBLANCK of Berlin. Wiesbaden: J. F. Bergmann. 1904. Pp. 42. Price 1.20 marks.

Professor Dumont's work is divided into three main portions dealing respectively with general anæsthesia by inhalation, general anæsthesia by spinal injection, and local anæsthesia. The book is clearly written but is marred by being too much of a compilation, with too little of the author's own experience and observations. The illustrations are good. Local or regional anæsthesia is very fully dealt with and obviously many substances have been used for this purpose abroad with which we are unfamiliar in this country. Yet their very multiplicity suggests that no one of them has proved to be satisfactory, and, indeed, Professor Dumont's excellent discussion of local and general anæsthesia in comparison shows him to be, generally speaking, an enthusiast for the latter rather than for the former process. In this connexion the tables which he quotes from Mikulicz are deserving of notice. Mikulicz found to his surprise that the occurrence of lung troubles after laparotomy was not in the least affected by employing local instead of general anæsthesia. Only in gastrostomies did there appear to be any difference in favour of the local method. In all other cases results slightly favoured general anæsthesia or were almost the same with the two processes. If other surgeons could repeat Mikulicz's comparison a most important lesson might be learned with regard to those after-effects that are urged as a contra-indication of general anæsthetics in laparotomies. Careful notes, however, must be provided of the nature of the general anæsthetic employed and the method by which it is administered. These are wanting in Mikulicz's tables as quoted by Professor Dumont. The author speaks favourably of ethyl chloride as a preliminary to ether but unfortunately gives no information as to how wide his experience has been of this anæsthetic sequence. "Combined narcosis"—i.e., anæsthesia by means of ether or chloroform preceded by morphine in various forms and combinations—seems to be a very favourite method on the continent. The advantages which Professor Dumont claims are lessened secretion of mucus and the like, prevention of reflex syncope, diminished after-sickness, and great economy of chloroform. He seems to think highly of ethyl chloride and quotes statistics of 16,000 cases with one death. Ethyl bromide he considers a very dangerous anæsthetic. Generally speaking his favourite anæsthetic seems to be a mixture of ether and chloroform in the proportions of 1 to 2 parts.

Dr. Koblanck's little book does not call for much comment. Its scope is, as indicated by the title, strictly limited. Nor is there in it much evidence of experience or of any new observations. Dr. Koblanck prefers to avoid general anæsthetics in face operations, an opinion in which many surgeons will disagree with him. He considers gout a serious contra-indication for ether and chloroform but does not explain why. His consideration of the mental or psychical attitude of the patient in relation to the taking of anæsthetics may be alluded to as being particularly worthy of perusal.

A Text-book of Clinical Anatomy for Students and Practitioners. By DANIEL N. EISENDRATH, A.B., M.D., Professor of Clinical Anatomy in the Medical Department of the University of Illinois, &c. With 155 illustrations. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 515. Price 21*s.* net.

Professor Eisendrath's is the latest addition to the number of text-books of applied anatomy of which there has been so plentiful a supply of late years. It is a lavishly illustrated octavo volume of convenient size but of great weight. In the words of the author "its object is to serve as a bridge for both practitioner and student from the descriptive anatomy, as it is usually taught in the first two years of a medical course, to its daily application at the bedside, in the clinic, or in the operating room." We think that Professor Eisendrath has achieved his design and at the same time has succeeded in presenting his matter in an attractive and interesting manner. The arrangement adopted is regional and in dealing with each region the parts to be recognised by sight or touch are first indicated; directions for surface-marking the deeper structures then follow; and finally a short exposition of the main clinical applications of the anatomical facts completes the section.

We have tested the information supplied in many directions and on the whole find it fairly full and accurate. There is nothing of striking novelty to note. There are some points, or rather, we should say, many, which will need amendment in future editions. We will mention a few of these. In Fig. 8, illustrating the relations of the cranial nerves, Meckel's ganglion is misnamed otic. The assertion that the nasal bones reach only to the level of the inner canthus is surely inaccurate. The attribution of stertor to buccinator paralysis ignores the soft palate which is the chief factor. To state that "the aorta reaches the vertebral column on the left side of the upper dorsal vertebra" is not illuminating. The surface marking given for the axillary artery in Fig. 96 is surely incorrect. The caudate lobe of the liver is certainly not the lobe so labeled in Fig. 72. The same figure gives an erroneous idea as to the complexity of the root of the mesentery. The surface relations of the lung in the right axilla as given on p. 153 do not agree with those in the accompanying illustration, which are more correct. The subclavian vein and artery do not lie beneath the pectoralis minor, as stated on p. 154, neither does the brachial plexus lie in front of the subclavian artery (or even in front of the axillary) in its second stage.

We are bound to state, and the few examples quoted above form our justification, that the book shows evidence of want of sufficient revision. This is a great pity as the plan is good and the applications are mostly up to date. The illustration of surface markings by photographs direct from the

model has much to recommend it and imparts life to a subject which easily degenerates into a dry repetition of well-worn facts.

An Atlas of Human Anatomy for Students and Physicians. By Professor CARL TOLDT, M.D., assisted by ALOIS D. ROSA, M.D. Translated from the third German edition by M. EDEN PAUL, M.D. Brux. Second Section: Arthrology (Figs. 378 to 489 and Index). 1903. Pp. 94. Price 6*s.* net. Third Section: Myology (Figs. 490 to 640 and Index). 1904. Pp. 141. Price 8*s.* 6*d.* net. London: Rebman, Limited.

THE second section of Toldt's Atlas, translated by Dr. Paul, in every way equals in excellence the first. This fasciculus is a small one and is devoted to arthrology only. All joints are fully illustrated from various aspects and the translator has adopted the same system of terminology as in the previous section with the same happy results. We notice that the author does not figure so many facets on the articular surfaces of the femur and patella as is customary among English anatomists and in the shoulder-joint gives no distinct indication of the gleno-humeral bands as ordinarily described. In other respects the illustrations closely follow the conventional lines.

The third section is what it purports to be—viz., an Atlas of Myology—and is practically confined to this subject. The plates showing dissections from superficial to deep parts are admirable but what strikes us is that this arrangement, whereby the muscles are dealt with by themselves and with all reference to the nerves that supply them or the blood-vessels and other structures which lie in relation to them omitted, is one which is rather artificial. There are some excellent plates in a supplement dealing with the anatomy of the inguinal and crural canals in relation to hernia. Practically in these plates alone are the relations of the blood-vessels and adjoining structures figured. We are glad to see the introduction of groups of muscles long since classified together as synergistic and their antagonists acting on a particular joint. A limited number of figures are devoted to the minute structure of muscle. A useful general illustration is given in Fig. 505 showing the relations of the fasciæ in a limb to the various muscles and to the bones.

As showing the general plan of the work we may take the plates on the muscles of the back, Figs. 507 to 514. One plate is devoted to the superficial muscles and so on in succession until the deepest structures are reached, and finally there is an outline diagram showing the skeleton on which the origins and insertions of the long and short muscles are indicated by different coloured lines.

Several dissections are shown, more especially of the limbs, in which the attachments only of the muscles to the bones are left and indicated in colour (Figs. 565, 567, 573, 577, 609, 610, and so on). Some of the dissections showing the muscles passing between the lumbar vertebræ and the hip-bone—e.g., Figs. 592 and 594—give views that are not commonly found in English text-books. There is a very complete index.

LIBRARY TABLE.

Africa and National Regeneration. By E. F. CHIDELL. London: Thomas Burleigh. 1904. Pp. 78. Price 1*s.*—The preface to this, the second, edition of this pamphlet is rather longer than the whole of the first edition. The author avers that there is pressing need for the utmost haste in settling in Africa a large population of Britons, where there is land, the best and richest of all her wide inheritance, of which England has not yet abdicated the sovereignty, a land of the size and possibilities of which the home-staying Englishman finds it difficult to form a correct conception. He reminds the public that medical science will ultimately solve the problems presented by tropical diseases and that these advances will much enlarge the profitable range of the white man in Africa. Mr. Chidell writes that "attention has been drawn to the supreme importance of land, to the absolute necessity of it to a State that hopes to play a leading part in human destinies. That England, or the British Empire as at present constituted, can continue to rank for an indefinite time with such coherent and colossal aggregates as Russia, the United States, and perchance before long China, is a supposition unsupported by the facts of the case. For land is the primary need of man; his other material wants resolve themselves into dependence upon it; and the greatness of States is principally measured by it." He advocates the settlement by the State of a population in Africa from the British Isles at the rate of about a million persons a year and offers many suggestions as to how this may be carried out.

Intercolonial Medical Congress of Australasia. Transactions of the Sixth Session held in Hobart, Tasmania, February, 1902. Published under the direction of the Literary Committee by GREGORY SPROTT, M.D. Glasg. Tasmania: John Vail. 1903. Pp. 480.—The delay in issuing these Transactions has been caused by pressure of work in the Government printing office and to some extent by authors not returning proofs as speedily as they might have done. Some of the papers have already been published in various medical journals. In the Introductory Address on Cancer Dr. H. B. Allen, professor of anatomy and pathology in the University of Melbourne, draws the general conclusions that malignant tumours in young people show no recent sign of increase; that among the external cancers, those of the face and lip in males appear to be less frequent than formerly, while cancer of the breast in women has also decreased; that uterine cancer has only slightly increased, the rates for women under 55 years of age being lower than they were 30 years ago; and that the apparent increase of cancer is most marked in old people and particularly in women aged 75 years and upwards. Dr. Allen is strongly of opinion that most of this apparent increase is fictitious, being due partly to changes in the age distribution of the population and partly to more regular medical examinations, better diagnosis, and more explicit registration. The cancer statistics of Australasia, compared with those of England and Wales, show that the rates are decidedly lower for males and for females, and this both for all ages and at almost every period of life except for persons aged 75 years and upwards. The work of the congress was divided into five sections—viz., Medicine, Surgery, Eye, Ear, and Throat Section, Gynæcology, and Public Health. Excluding the presidential addresses there were contributed 14 papers in the section on medicine, 17 in the surgery section, 13 in the eye, ear, and throat section, 9 in the section on gynæcology, and 12 in the public health section. The papers are printed in this volume; among them is a paper on Adenoids in Adults by Mr. W. Kent Hughes of Melbourne. There is a good paper on Some of the Rarer Forms of Eye Diseases met with in Tasmania by Dr. G. Heuzé Hogg of Launceston, which is illustrated. The clinical matter throughout the volume is evidence of the excellent and high-class work which is being done by the practitioners of Australasia.

How to Become a Certified Midwife. By E. L. C. APPEL, M.B., B.S., B.Sc. Lond. London: The Scientific Press, Limited. 1904. Pp. 29. Price 1*s.*—The legal requirements of the Midwives Act differ somewhat in different cases. Dr. Appel in this little book, which is well written and well arranged, sets forth these requirements in such a way that a woman can by referring to the table of contents find those which are applicable to her case. The pamphlet is divided

into three chapters. The first chapter deals with certification and how to become certified before March 31st, 1905, and after that date. The second chapter gives the rules and regulations issued by the Central Midwives Board which the certified midwife will be required to obey. The final chapter deals with her relations and duties, as a certified midwife, to the local authority of the area in which she intends to practise as a midwife. There is an appendix of the names of approved institutions under Section C of the rules of the Central Midwives Board and of institutions the certificates of which are accepted as qualifications under Section 2 of the Act.

JOURNALS AND MAGAZINES.

Medical Electrology and Radiology.—Three articles published in the June number are continued in July—namely, those on the Treatment of Affections of the Gastro-intestinal Tract, by Dr. George Herschell; on the Application of High-frequency Currents, by Mr. C. A. Wright; and the Lectures on Physics applied to Medicine, by Sir Oliver Lodge. The meetings of the British Electrotherapeutic Society are reported at considerable length as usual. The July number also contains articles on the X Rays in the Diagnosis of Joint Conditions and on Treatment by Blue Light.

Caledonian Medical Journal.—The opening article in the July number is a Plea for More Accurate Clinical Observation by Dr. James Mackenzie of Burnley, the author of an excellent work on the study of the pulse by means of various recording instruments such as the sphygmograph. Other contributions are on the Medicinal Plants found in the Scottish Highlands, by Mr. Henry White; on Heredity in the Scottish Highlands, by Mr. A. Macdonald; and on the Use of Alcoholic Beverages in Scotland about the Year 1735—namely, before the consumption of whisky became generalised.

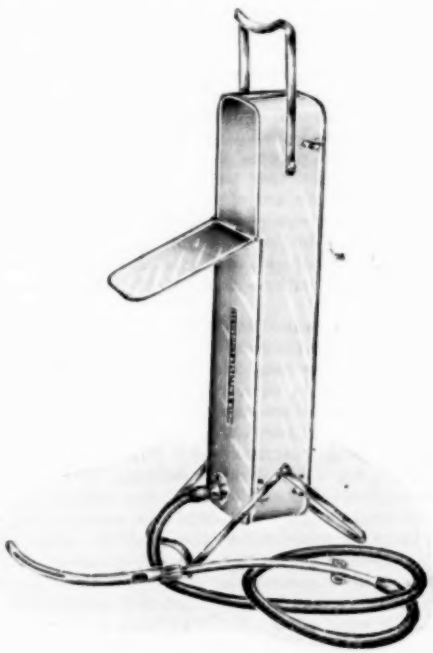
Journal of the Irish Medical Association.—The July number is mainly occupied with a report of the annual general meeting of the Association held in the buildings of the Royal College of Surgeons in Dublin on June 7th. The leading article is on the subject of Superannuation for Poor-law Medical Officers.

New Inventions.

A HANDY AID TO CLEANLY MIDWIFERY.

BELIEVING that any appliance which will make surgical asepsis, and consequently safety, easier of attainment in operative midwifery will be welcomed by the profession at large, especially if it does not entail carrying cumbersome apparatus, I append a description of a combined steriliser and irrigator which I have invented and have found very useful in my own practice. It is not heavy and not bulky, the measurements being 16 × 3½ × 2½ inches. It will therefore go quite easily into any ordinary midwifery bag and the forceps, douche tube, &c., can be packed inside it to save space. It consists of a kind of box, made of sheet copper, tinned inside, and having an opening at one end for five inches of its length, which I have found sufficient for the insertion and removal of any midwifery instrument. Near the other end is a hole, tapped to receive a screwed-in nozzle to which to attach rubber tubing. It is fitted with three supports which fold quite flat when not in use. Nos. 1 and 2 of these form the legs when the instrument is in the horizontal position in use as a steriliser, while Nos. 2 and 3 form a firm base of support when the instrument is in a vertical position in use as an irrigator. No. 1 can in this position be used as a handle or as a suspending loop.

My manner of using the instrument is as follows. [On ascertaining that the application of forceps is likely to be necessary I put my forceps (Anderson's or the Barnes-Simpson pattern with metal handles), together with a Bozemann's douche-tube, into the steriliser, pour on boiling water from a kettle, and light the lamp. If the instruments are wanted immediately I usually put a clove hitch of thread on the ends of the handles to facilitate removal, but they



can be removed by hand a very short time after boiling if the can be placed vertically first. Having removed them and allowed them to cool in the air till they are cool enough to use I lubricate with biniodide of mercury soap and apply them. By the time the third stage is over the water in the can is probably cool enough to use for douching; if not, as ascertained by thermometer, as cold *boiled* water is not usually available I have added some of the antiseptic (generally potassio-mercuric iodide) to some *cold* water while the instruments were boiling, so that by now the solution is quite aseptic and will produce when mixed with the hot water a solution of about the right strength. This having been added to the hot water so as to produce a mixture of the required temperature, the tube is connected up and the irrigation proceeded with. I know that there is much diversity of opinion respecting the necessity and even the advisability of douching; but I am speaking now of *operative* cases, and I use a douche in every case in which my hand or any instrument has been introduced into the uterus. I do not advise the abandonment of our old friend the "Higginson," as it is useful for the preliminary vaginal douche and also sometimes for rectal purposes.

The combined steriliser and irrigator has been very neatly made for me in polished copper, tinned inside, by Messrs. Mayer and Meltzer of 71, Great Portland-street, who have carried out my ideas very faithfully and with strict regard to both utility and portability, and to them I am indebted for an improvement upon my original design in the matter of attaching the supports. The steriliser as made is, of course, available for the general purposes of a steriliser as well as for its special use in midwifery cases. Its fluid capacity when standing vertically for use as an irrigator is about four pints.

WM. SALISBURY-SHARPE, M.D. Durh., M.R.C.S. Eng.,
Cleveland-terrace, W. L.R.C.P. Lond., D.P.H.

THE LANCET.

LONDON: SATURDAY, JULY 30, 1904.

The British Medical Association: The President's Address.

FOR the fourth time since its inception the British Medical Association has held its annual meeting in Oxford. At the first meeting in 1835 some 300 members attended, the second meeting was held in 1852, and the third in 1868. At this last meeting the total number of members of the Association was 3672 and some 500 of these were present at Oxford. To-day the Association numbers over 19,000 members and the number of members attending the meeting which commenced on Tuesday, the 26th, is about 1500. In his presidential address, which appears in another column, Dr. WILLIAM COLLIER recalls these facts, making them a pendant to the main subject of his address, "The Growth and the Development of the Oxford Medical School."

The teaching of medicine at Oxford is no new thing, for there is a tradition that at some time during the ninth century there was a Jewish School of Medicine existing in Oxford but this of course was before the foundation of the University. During the thirteenth century the great ROGER BACON lectured upon various scientific subjects, including probably medicine as it was understood in those days, and met with the reward which is commonly meted out to those who are in advance of their age. Passing over some 200 years it is curious to note that one of Oxford's most famous sons—namely, LINACRE—who was a Fellow of All Souls, who lectured on physic and who encouraged the teaching of medicine both at Oxford and Cambridge, was indirectly the cause of the blight which stunted the growth of the medical schools at both these universities by his foundation of the College of Physicians in London. In the seventeenth century the study of medicine at Oxford received enormous impetus through the influence of HARVEY, SCARBURGH, WILLIS, and WREN who, though known to everyone as an architect, is almost unknown as an anatomist. But despite great names such as SYDENHAM and RADCLIFFE the teaching of medicine at Oxford languished although many efforts were made to overcome the hatred, for we can use no other word, with which science was regarded at Oxford. BUCKLAND, the eminent geologist, lectured on that subject at Christ Church greatly to the horror of Dean GAISFORD. Apart, however, from the subject of his lectures BUCKLAND must have been a trying colleague, for he not only kept various wild animals in Tom Quad but also invited his colleagues to dinners at which strange meats such as crocodile and monkey were served. Two years after the return of ACLAND to Oxford in 1845 as Lee's reader in anatomy a new era was entered. ACLAND conceived the idea of a building under which all departments of the natural sciences should be housed and, for events move slowly in Oxford, eight years later—namely, in 1855—the foundation-stone of the museum was laid by the then Chancellor, the Earl of DERBY. This was the beginning of the revival of the Oxford Medical School and it is mainly due to the unremitting toil of ACLAND that the medical school has grown to what it now is.

Oxford has been unkindly called "the home of lost causes." It is not within our province to discuss the various political and religious movements which, having their birth in Oxford, profoundly affected the country at large, but the medical school, which at one time indeed seemed "lost," has renewed its youth. It has men and laboratories in which they may work, it has energy and the desire to do good work, but it is poor. The city of Oxford has no rich citizens like those who have given so generously to the Universities of Liverpool and Birmingham, neither can the clinical material for instruction which is available in Oxford compare for one moment with that which is always at hand in London or Edinburgh. But the University possesses one asset which is of incalculable value, the love and remembrance of her sons. There is hardly an Oxford man who will not say of his University,

> "Ille terrarum mihi praeter omnes
> Angulus ridet,"

and it may be that the attention which is now called towards the Oxford Medical School by the meeting of the British Medical Association can be made the foundation of an appeal for offerings towards the better endowment of that school. To heal the sick, to aid in lessening the sum of human misery, and to add even a little to our at best imperfect knowledge of the natural sciences is no unworthy task for that corporation the motto of which is "Dominus illuminatio mea."

The British Medical Association: The Address in Medicine.

IN delivering the Address in Medicine at the annual meeting of the British Medical Association held this year at Oxford Sir WILLIAM CHURCH selected as his subject "Our Sanitary Needs, with Special Reference to the National Health." He prefaced his remarks with an allusion to the last occasion on which the Association met at Oxford, namely, in 1868, when addresses were delivered by ACLAND, ROLLESTON, and GULL, who will always be remembered not only as ornaments of our profession but as leaders who accomplished much in the promotion of medical and surgical knowledge. He also pointed out that the meeting in 1868 was for another reason of unusual interest, for it may be taken as marking the date of "the parting of the ways." Up to that period the conceptions of the causes of morbid changes in the body were still practically those introduced by the originators of pathology, MORGAGNI, HUNTER, CARSWELL, and others, and it was only in 1867 that LISTER read at Dublin his paper on the antiseptic principle in the practice of surgery; it was at this time also that the possibility of the infectivity of tuberculosis began to be recognised generally. Thus the ground was prepared for the science of bacteriology but it was not until some years later that this branch of medicine was firmly established. The quotations from GULL's address on Clinical Observation

in Relation to Medicine in Modern Times showed how great is the abyss which separates the medicine of to-day from that of our immediate predecessors.

Passing to the main subject matter of his address Sir WILLIAM CHURCH proceeded to make some remarks on the principles of preventive medicine, pointing out that the exact knowledge based on scientific research and demonstration which has now been established of the cause and nature of disease has a greater influence on preventive or State medicine than on clinical treatment. It will not be disputed that, in the majority of instances in which the mortality of a disease has been lowered, this has been due to a lessened incidence of the malady brought about by improved hygienic means rather than by the introduction of new therapeutic measures. Sir WILLIAM CHURCH dwelt on the dictum (which cannot be too often repeated) that the health of the people, both bodily and mental, is the principal asset of the nation. Much has lately been said about the deterioration and the degeneration of the British population and we cordially endorse his hope that the committee of the Privy Council on the physical disability of recruits, now engaged in framing its report, may urge on the Government the desirability that a physical census of the nation should be taken from time to time and that the physical condition of the children in our primary schools should be recorded as regularly and carefully as their educational progress. In our opinion the most important note in the address was reached when Sir WILLIAM CHURCH referred to the powers possessed by the medical officers of health and the medical officers of the Local Government Board. There can be no doubt that he is correct when he maintains that neither in the Government nor in the country do they hold the position which they are entitled to command in virtue of their high qualifications and the importance of their duties. The explanation of this fact probably lies in the great ignorance shown by the mass of the population of the principles on which the regulation of the public health depends. The local sanitary authorities are prone to value their own ideas on hygiene more highly than the opinions expressed by the medical officers of health who have been specially trained in such matters, and as the tenure of the professional appointments is in great measure determined by those bodies if the officers have the courage of their convictions and refuse to accede to actions of these authorities undertaken against medical advice, very awkward situations may arise. Dismissal or suspension of a medical officer must be at once reported to the Local Government Board, but this fact does not obviate much trouble. During the past year the Council of the British Medical Association and its medico-political and public health committees have been engaged in framing a Bill which it was hoped might be brought before the consideration of the Government urging reform in the Public Health Department of the Local Government Board. Sir WILLIAM CHURCH quoted three clauses of the proposed Bill, one of which has direct reference to the point in question. The clause runs thus: "That both in the Local Government Board and in the local authorities the medical element should have greater weight and authority than at present and that the medical officers of health throughout the country should be responsible to the Local Government Board as well as to the local authorities." It is the latter part of the clause that should be particularly emphasised. The difficulties which have arisen as to the enforcement of the Vaccination Acts have proved how important it is that there should be a supreme control over the local authorities, especially in regard to medical matters. Unless such a control is enforced constant friction and difficulty will be experienced in carrying out sanitary reforms.

Sir WILLIAM CHURCH impressed upon his hearers the necessity of educating the public on a most vital question and of trying to convince them that efficient sanitation is not a fad on the part of medical men but that it is an essential matter which concerns every living creature. We have frequently laid stress on the necessity of medical practitioners taking advantage of every opportunity of instructing those with whom they come into contact in the elementary principles of preventive medicine. Such tuition, we believe, will have greater force in preventing disease and raising the general health of the people than any by-laws emanating from the local sanitary authorities, although these laws have their use in compelling those who refuse to be taught so to regulate their lives that they may not become sources of danger to their fellow citizens.

Sir John Simon.

THE death of Sir JOHN SIMON is an event of the first importance. Not only does there pass from among us one of the illustrious figures in Victorian medicine, but by our loss of the great pioneer in practical sanitation we are reminded that 60 years ago the most fruitful province of modern scientific research—namely, preventive medicine—was an untilled territory. To appreciate properly the circumstances in which SIMON began his labours in the field of public health requires a conception of times which already seem far back in our history. It is needful to remember that in the "forties" our modern doctrine that it is the duty of the State to seek out and to prevent causes of disease and death among its citizens was seldom advanced or admitted. There was, when SIMON began his life-work, no administrative authority in the country, central or local, that had any medical officer or medical adviser for sanitary purposes; the development of a science and practice of preventive medicine as we know them to-day was quite undreamt of. Of that science and practice SIMON, the first, and for many years the only, medical officer of health in London, and afterwards the head of the medical department of the Government from the year of its creation in 1855 to his retirement in 1876, must be considered as the founder and in some directions the creator. This is made abundantly clear in our detailed obituary which will be found in other columns of this issue of THE LANCET. In his work on "English Sanitary Institutions" SIMON has himself traced many of the circumstances and new movements which by the middle of last century had operated to prepare the public mind to respond in the way that it did to the call for sanitary reform and the prevention of disease. To adopt his phrases, "humanity during the eighteenth and early part of the nineteenth century had slowly become

established as an essential and abiding factor in English politics." Underlying the current habits of thought regarding legislation and administration had arisen "a spirit so changed from that of the old times as virtually to be the adoption of new standards of weight and measure in politics." Among the early fruits of this new movement was a recommendation by the Health of Towns Commission that large towns should be given power to appoint medical officers of health. The first town to obtain these powers was Liverpool which appointed the late Dr. W. H. DUNCAN in 1847. The City of London followed in 1848, obtaining Parliamentary powers for the purpose, and SIMON, being then only 32 years of age, held the office from that year to 1855. How the work that he then did led to his appointment as medical officer to the Privy Council, and how his grand conception of his official duties resulted in the formation of a public health service for this country are shown in our obituary notice. The record of ability and industry is a marvellous one, and, above all, SIMON'S imaginative faculty must be noted. Cultivated to an extraordinary degree, a linguist, a student of Oriental literature, the friend of artists, poets, and philosophers, he was able to think grandly, to project his mind into the future, to discern the real meaning of social evils as well as their probable developments, and so to devise schemes of prevention and amelioration that could never have occurred to more plodding if equally industrious spirits. This it is to be a man of genius.

Annotations.

"Ne quid nimis."

THE WIGHTMAN LECTURE.

IN delivering the first Wightman lecture before the Society for the Study of Disease in Children Mr. R. Clement Lucas, after alluding in a few sympathetic words to the circumstances attending the foundation of the lecture, proceeded to discuss the various diseases at one time believed to be constitutional and hereditary and to show what an extraordinary modification of view has taken place in reference to many of these diseases as the result of modern scientific discoveries. The position of the majority of the so-called diatheses as constituting an etiology behind which inquiry need not be made has been demolished by the discovery of particular organisms which are shown to be the causes of those diseases and which are proved to be infective and communicable from one person to another. In this way tubercle, leprosy, malaria, and acute rheumatism have had an entirely new light thrown upon their modes of origin and means of extension, and Mr. Lucas makes an interesting quotation from the classic work on medicine written by Sir Thomas Watson to show how the prevailing theory of hereditary transmission caused the best observers to shut their eyes to obvious instances of contagion because "a diathesis is not communicable from person to person." Next in frequency to "diathesis" as a cause of disease heredity was placed in all but the most modern treatises, and here Mr. Lucas sums up present knowledge clearly, though his opinions will not escape criticism. Passing in review the undoubted hereditary transmission of nervous diseases as well as of mental ability, he alludes to the observations of Langdon Down and Galton as to the relative ability of the children of members of the three learned professions law, medicine, and the church, of which law produces the largest number of distinguished descendants, medicine follows closely, while the descendants of the clerical profession show the largest proportion of weak intellects and the least amount of ability. This has been explained by the relative mental activity of the parents and is an uncomplimentary comment upon the Protestant clergy as a whole, founded, some may think, on insufficient grounds. With regard to the transmission of external defects and deformities Mr. Lucas recalls to our attention with what tenacity such defects as suppressed, supernumerary, and webbed digits cling to certain families in spite of the constant introduction of fresh blood. Referring to hare-lip and cleft palate he alludes to an observation published by him in the Transactions of the Clinical Society for 1888, showing that the absence of a lateral incisor tooth in a parent may foreshadow a hare-lip or cleft palate on the same side in the offspring. To this he now adds a further observation that an ill-developed lateral incisor in the mother may foretell a more serious defect in the same line of development in her child. From these observations it may be concluded that the appearance of a deformity is often not so abrupt as at first sight it would seem to be. Dismissing the influence of maternal impressions as unworthy of serious argument, he next shows that many deformities appear to date back to a very early period in the procreative process and it is suggested that an incompatibility between sperm and germ cell, such as produces hybrid deformities in plants, is not an unreasonable hypothesis to account for this fact. Later deformities, seeing the number of physical defects associated with the lack of mental development, may be due to lack of controlling influence of the nervous system. A defect in development once established is exceedingly difficult to eradicate, for what the lecturer terms the tyranny of the ancestor comes into operation in spite of every desire to escape from his influence. Physical and mental deterioration are regarded as dependent on two factors—the defective health of the parents and the unhealthy surroundings and deficient food of the children. Much as may be done by good air, food, and physical and mental training for the child, he cannot escape from his ancestry and the upward development will be gradual in spite of every desire to hasten it. But to this end philanthropy should be directed. We regard the lecture as a vigorous attempt to dissipate many medical superstitions that have been impressed by ancient authorities and to bring medical thought up to the level of twentieth century knowledge in matters connected with heredity. At the same time we congratulate the society on having been intrusted at this early stage of its existence with a valuable endowed lectureship; and we consider the example set by Mr. Wightman of endowing medical lectures as one well worthy of imitation.

THE CHILDREN'S COUNTRY HOLIDAYS FUND.

WE have repeatedly written in support of this admirable organisation which in many ways has claims upon the public. In a few short years the child will become an adult citizen and his good health or ill health will make all the difference between his being a useful or comparatively useless member of society. In a recent issue of THE LANCET (July 9th, p. 99) we called attention to a letter which Sir William J. Collins, the chairman of the Education Committee of the London County Council, had written on behalf of the fund and we have now received an appeal from the Bishop of London, for the subscriptions in hand are nearly £2000 short of the normal amount at this date when there are over 15,000 children booked to be sent to the country for a fortnight's holiday on August 4th. As the Bishop of London points out, the schools are standing empty in consequence of the summer recess and until they open again at the end of August

London can hardly contain the hordes of children who pour forth to play in every court and alley, and we agree with his lordship when he says that too many of these children have only exchanged the spacious school buildings for overcrowded rooms. Many children will no doubt have to be disappointed, for some £6000 are required to complete the programme of the committee of the fund, but £2000 are required immediately and we trust that the money will be forthcoming without delay. It is in the interest of the community as a whole no less than in the interest of the individual that we endorse the appeal which is being made on behalf of the fathers and the mothers of the next generation.

ENTERIC FEVER AT ELTHAM AND MOTTINGHAM.

IT is a somewhat remarkable fact that in these days when local government in some places has reached such a high standard of efficiency there should be other places wherein the ratepayers, being unable to obtain satisfaction from those whom they have elected to safeguard their health, should be compelled to call in outside professional assistance, and this notwithstanding the fact that at least one of the sanitary authorities here concerned possesses a medical adviser of distinction and recognised ability. Such, however, appears to have been the case at Eltham and Mottingham, where the repeated occurrence of enteric fever so alarmed certain of the ratepayers that a fund was subscribed and with it the advice of Dr. W. J. R. Simpson, the late medical officer of health of Calcutta, was procured. This fact is instructive in many ways. The inquiry took place at the end of 1903 but we have only quite recently received the report which Dr. Simpson made as to the occurrence. This may have been due to the circumstance that the ratepayers concerned may have been unwilling to draw public attention to the locality until efforts had been made to bring about a better state of affairs. As, however, Dr. Simpson, as a result of a recent visit, is unable to record any very material improvement in the conditions which his first report revealed we presume that the ratepayers are anxious to call to their aid that subtle power known as "public opinion." Dr. Simpson's report, though comprehensive, is a little difficult to follow and in the absence of the necessary information in the report we have had considerable trouble in discovering the sanitary districts involved. We conclude, however, with some hesitation, that Eltham is in the metropolitan borough of Woolwich and Mottingham in the Bromley rural district, and the corresponding sanitary authorities are, according to Dr. Simpson's report, in default. It would appear that in certain areas of these two places, the populations of which are not very clearly indicated, there were cases of enteric fever from 1898 to 1901 and that such cases were distributed in time as follows:—

1898	1899	1900	1901	1902	1903		
6	4	1	5	12	11	=	39

But before dealing with the cases as a whole six are thus eliminated. "The probable cause of one was the partaking of watercress, four were probably imported, and one seems to have been due to the eating of oysters about a fortnight before taking ill." This leaves 33 cases, and three of these formed "part of a small outbreak ..... which Dr. Davies, the medical officer of health, after inquiry, attributed to the milk supplied by a dairy at Eltham." The inquiry into the remaining 30 cases, ten of which occurred in 1902 and ten in 1903, seemed, Dr. Simpson thought, to point to milk as having been the most probable vehicle of infection and there are certainly several facts which are not inconsistent with this view. But we are not told what was the opinion of Dr. S. Davies or the other medical officer of health involved with regard to these cases and the elimination of the nine cases already referred to complicates the matter in one sense while it simplifies it in another. It would, we think, have been well had the milk-supply of all the cases been given. But the facts that 28 of the 30 cases which have been comprehensively dealt with were women or children and that the ten cases in 1902, as also the ten cases in 1903, were all supplied from one source, and that not the source of nearly the whole population, are decidedly suspicious. Nevertheless, there are some lacunæ which want filling and the age and sex distribution of the population in the special areas involved would have enabled a better idea of the problem to be arrived at. We should, too, have liked a more detailed account of the milk-supply and some information as to whether any of the milk thought to be involved went elsewhere than in the specific rounds of the milkman suspected, whether any of it was sold to other milk vendors and, if so, with what results. The number of cases is so small that most detailed investigation is necessary to furnish adequate evidence for any thesis. Dr. Simpson passes over the water-supply in a somewhat cursory fashion, merely stating that "the water-supply of all the areas is obtained from the Kent Waterworks." It would have been helpful had some further information with regard to the separate mains and hydrants been procured, as the possibility of local contamination in a polluted soil such as this was shown to be has to be borne in mind. But the outbreak does not look to us quite like a water-borne outbreak and in the absence of a definite common cause more information with respect to the possibility of personal infection would have been of value. But whatever may have been the cause of the Eltham and Mottingham cases Dr. Simpson's inquiry has undoubtedly revealed the fact that the sanitary condition of the dairy farms from which the milk of the district was procured and the cleanliness of the cattle from which the milk was drawn were far from satisfactory. Moreover, there are certain facts which suggest that the udders and the legs of the cows may have become specifically fouled from the streams in which the cattle waded. If, therefore, the inquiry had led to improvements in this direction gratitude would be due to the ratepayers who have found the money for the inquiry. But, as is so frequently the case in circumstances such as these, no such improvement appears to be taking place in spite of the fact that Dr. Simpson has pointed out several matters which require rectification. Unfortunately the report contains but little reference to the powers under which these improvements might be made. For instance, we are still in ignorance as to whether the Bromley rural district council has made any regulations under the Dairies, Cowsheds, and Milkshops Order or whether any action has been taken under the Rivers Pollution Prevention Acts. It is always well to put before the local authorities the machinery by which the reforms suggested may be carried out. Unofficial inquiries of this nature are somewhat delicate proceedings and the relations of the medical man concerned with the officers of the local authority are apt to be difficult. But in cases where the local officers have advised their local authorities in vain, and the aid of the Local Government Board cannot be procured, the advice of an expert well trained in epidemiology and administrative methods may not be unwelcome. But the occasions must necessarily be rare.

THE ETIOLOGY AND TREATMENT OF ARTERIO-SCLEROSIS.

IN accordance with the wider growth of knowledge concerning arterio-sclerosis as a cause of disease and premature decay increased attention has been given in recent years to the early diagnosis and treatment of this morbid constitu-

tional condition. In THE LANCET[1] some months ago an account was published of the early diagnosis of arterio-sclerosis. In a recent discussion at the New York Academy of Medicine, a report of which is published in *American Medicine* of June 25th, Professor J. M. Anders of Philadelphia and others dealt with the no less important matters of the etiology and treatment of arterio-sclerosis. Professor Anders divides the causes of arterio-sclerosis into five categories: first, toxic agencies such as syphilis, alcohol, and gout; secondly, over-eating (excess of carbohydrate and nitrogenous food); thirdly, constant hypertension of the arteries produced by muscular overstrain, as in some forms of athletics; fourthly, aortic regurgitation; and, lastly, the oncoming of senility (senile degeneration). Prophylaxis should, he says, be begun in early life when a tendency to arterio-sclerosis is detected. The diet should be carefully regulated, over-eating should be avoided, and the amount of nitrogenous matter (meat) consumed should be reduced to as little as possible. Athletics involving much muscular exertion, such as rowing, wrestling, and weight-lifting, should not be indulged in, a little walking and daily massage being found sufficient to keep up the tone of the muscles. Water, says Professor Anders, may be freely drunk, so as to promote perspiration and the free excretion of waste products by the kidneys. Young men should be urged to moderation in games or feats of endurance. Arterio-sclerosis is not arrested but may be retarded by drugs, especially the alkaline iodides, nitro-glycerine, and the nitrites, all of which tend to lower the excessive arterial tension which marks the oncoming of arterio-sclerosis. In the discussion which followed the above communication Professor Alfred Stengel of Philadelphia stated that for successful treatment the disease should be taken in hand before nephritis or angina pectoris has developed. He has known arterio-sclerosis to follow convalescence from infectious fevers, especially typhoid fever. He urged that in all cases of convalescence from severe infectious fevers the period of rest and of abstention from work should be extended over several months, during which a steady course of tonic treatment should be pursued before the patient is permitted to engage in active or arduous work. Dr. F. Shattuck of Boston stated that alcohol should be absolutely forbidden to persons suffering from incipient arterio-sclerosis, as indulgence in it, even to the slightest degree, aided the rapid development of the disease. Dr. C. Stockton of Buffalo said that, in addition to strict abstinence from alcohol, a careful and light diet, and the administration of iodides and nitro-glycerine in small doses and for prolonged periods, the patient should be given vapour baths twice weekly. Dr. A. Jacobi of New York spoke of the danger of cardiac lesions (dilatation and cardiac inefficiency) which could be obviated by attention to details of diet and exercise and the administration of suitable drugs. Cases due to syphilis required careful and mild but prolonged antisyphilitic treatment.

CANAL ANGLERS.

IT is perhaps doubtful whether the attraction of angling in the canals with worm or other bait is as keenly felt in the south of England as it is in the north. There are in the northern towns thousands of working men who will sit patiently hour after hour watching their floats, at the end of which time they may not be able to boast that they have even had "a glorious nibble." On the Saturday before last 700 such men sat at fixed distances for a length of four miles on the banks of the Macclesfield canal for nearly two hours. They had time to smoke and to think, to bear out, indeed, Izaak Walton's statement that angling is the "contemplative man's recreation." 500 of them are said to have caught nothing. The heaviest fish was just over eight ounces and the smallest, as the report puts it, "was a ponderous creature of two drams." At all events, it is a harmless amusement and affords to its devotees the opportunity of breathing comparatively pure air.

[1] THE LANCET, Jan. 30th, 1904, p. 316.

THE PRESERVATION OF CHILD LIFE IN NEW ZEALAND.

THROUGH the courtesy of the Agent-General for New Zealand we have been furnished with a memorandum by the Premier of that colony on the preservation of child life. Briefly stated, the object of this publication is to assist the introduction into New Zealand, by a special Act, of a wide-spread system of charitable relief in relation to the dangers, necessities, and illnesses of childhood. Under the provisions of this Bill no midwives will be allowed to practise who are not duly qualified and their registration will be insisted on. A certain number of these certified women will be appointed in each district to attend poor persons gratuitously, their fees being paid out of the public funds. Maternity homes will be established and maintained throughout the colony. Hospitals will be erected and maintained expressly for the children of the poor. A staff of trained nurses will be provided for gratuitous home attendance. Day homes or crèches will be established for the reception of young children whose mothers are obliged to go out to work. The expenses necessarily connected with these various undertakings will be paid by the State. Further enactments resembling those in force in the mother country will be concerned with the prevention of cruelty to children. Abuses arising from the insurance of young children will be controlled, if not prevented, by limiting the amount to be insured in the case of any child under ten years of age to a sum not exceeding £5. The maintenance of illegitimate offspring will be secured in an equally practical way by compelling the guardian, mother, or alleged father to register the child—even a single child, be it noted—and by refusing the power to commute weekly or monthly payments with a capital sum. It is impossible not to sympathise with the intention of those who have designed this plan of charity. Certain of its clauses will meet with universal approval. All are worthy of notice as indications of an honest endeavour to solve a social problem than which there is none more worthy the attention of any people—the well-being of its children. We admit the obligation in many cases to assist poor persons with medical service and nursing at the public expense. We entirely concur in the resolution to put down cruelty after the methods which have proved so successful and so little irritating in this country. We congratulate those who have gone a step further than ourselves to regulate the insurance of young children and to save the illegitimate from the cruelest subtleties of infanticide. Having admitted so much it seems almost ungracious to resort to adverse criticism of details but too much help must not be proferred to people who can help themselves. The so-called poor in New Zealand where the working classes are in a relatively prosperous condition, can do much to help themselves. It would be an occasion of lasting regret and a cause of public damage if the principles of self-help and parental responsibility—factors in the creation of a sturdy type of character to which our race is deeply indebted—were swamped, as there is some prospect of their being, by the gratuitous generosity which the memorandum seems to contemplate. Where there is destitution the case is different. Here necessity calls for free service as an indispensable and for the most part as a temporary act of grace. The poor man who can contribute somewhat towards the cost of treatment in illness, his own or that of others dependent on him,

should be encouraged to do so and should feel that he does so in whatever degree may be reasonable. If, though poor, he is able to pay his way he requires no help from the State. If, on the other hand, he is taught to regard the national exchequer as an indiscriminating paymaster in illness in return for some contribution to general taxation, the bulk of which is borne by wealthier men, it is improbable that he will ever appreciate the meaning of responsibility. While, therefore, we willingly admit the value of the plan proposed in this memorandum up to a certain point we should prefer for the reasons stated to see it modified.

PAROTITIS COMPLICATING APPENDICITIS.

SINCE Mr. Stephen Paget called attention in 1887 at the Medical Society of London to parotitis after injury or diseases of the abdomen or pelvis the condition has been well recognised but few cases of parotitis complicating appendicitis have been recorded. In the *American Journal of the Medical Sciences* for May Dr. F. E. Bunts has published three cases. In the first a man, aged 29 years, was admitted to hospital on May 12th, 1902, with a severe attack of appendicitis. He declined operation and a large mass formed on the right side of the abdomen. He was fed exclusively by the rectum. After a week, when the symptoms were improving though the tongue remained dry and hard, he developed tenderness over the right parotid gland. Inflammation and suppuration followed and the abscess was opened on May 24th. A few days later the left parotid became inflamed. It also suppurated and was incised. The mass in the abdomen disappeared and the patient was discharged well on June 27th. In the second case a man, aged 29 years, was admitted to hospital on Jan. 28th, 1903, with acute appendicitis, the fifth attack which he had had in the past year. There were a mass on the right side and severe vomiting. Operation showed an abscess and a gangrenous appendix which was removed. On Feb. 6th he developed right parotitis. This terminated in an abscess which was incised. Two or three days later the left parotid became involved but though greatly swollen it did not suppurate. The appendicular abscess yielded a pure culture of the bacillus coli and the parotid abscess the staphylococcus pyogenes aureus. Recovery ensued. In the third case a woman, aged 62 years, who had had symptoms of appendicitis for a week, had a large mass in the right iliac region. An operation was not performed. She was allowed only water by the mouth and was fed by the rectum. The temperature gradually fell until July 22nd, when it reached normal. On July 26th it rose to 100·4° F. and the left parotid was tender and swollen. The tongue was very dry and hard. Five days later a little thick pus was evacuated after incision. On July 30th the temperature was again normal but on August 2nd it rose to 100° and right parotitis was beginning. This subsided without suppuration. Death, apparently from slow sepsis and exhaustion, occurred on August 21st. The fact that different organisms were found in the appendicular and parotid pus in the second case is opposed to the view that the parotitis was metastatic. In none of the cases did the parotitis appear to be a serious complication. Several explanations of secondary parotitis have been put forward. It has been ascribed to some nervous influence exerted on the gland by the affected abdominal organs, to metastasis, and to septicæmia. The most probable view seems to be that it is due to an ascending infection of Stenson's duct, to which the dryness of the mouth prevailing in the various primary conditions is a predisposing cause. The cases related above bear out this view. The prognosis of cases in which parotitis follows appendicitis does not appear to be worse than that of cases in which it does not occur, excepting rare cases in which the parotitis is a manifestation of pyæmia. The treatment is prophylactic and surgical. The former consists in frequent cleansing of the teeth, washing out the mouth with antiseptics, and removing the foul deposit from the tongue. When feeding by the mouth is interdicted the patient may be given something to chew so as to facilitate evacuation of Stenson's duct by the action of the masticatory muscles. For this purpose Dr. Bunts recommends "chewing gum." Surgical treatment consists in the application of heat or cold to check the inflammation and in incision when pus is present.

THE St. Bartholomew's Hospital testimonial to Mr. Alfred Willett will take the form of a silver medal to be known as the "Willett Medal" which will be awarded each year to the candidate obtaining the highest marks in operative surgery in the Brackenbury Surgical Scholarship. A gold medal of the same design will be presented to Mr. Willett.

Mr. Clinton T. Dent, surgeon to St. George's Hospital, has been appointed chief surgeon to the Metropolitan Police in the room of the late Mr. A. O. Mackellar.

REPORT OF THE ADMIRALTY COMMITTEE ON THE HUMANE SLAUGHTERING OF ANIMALS.

IN January of the present year the Admiralty appointed a committee to report as to the most humane method of slaughtering animals intended for the food of man. The committee was presided over by Mr. Arthur Lee, M.P., Civil Lord of the Admiralty, and included Colonel F. T. Clayton, C.B., of the War Office, Mr. Alexander Cope of the Board of Agriculture, Mr. Charles Game, chairman of the Cattle Markets Committee of the City of London, Mr. Gordon Miller, C.B., Director of Navy Contracts, Mr. Shirley F. Murphy, medical officer of health of the County of London, and Sir Henry Yorke, Director of Navy Contracts. The report of, and the evidence given before, this committee have just been issued and contain much interesting matter bearing upon the subject of inquiry. The committee examined numerous witnesses who had had experience in the slaughter of animals either as butchers actually engaged in the work or who had had large opportunity of observing the slaughter of animals through their duties bringing them into association with the slaughter-house. Beyond this the committee had the advantage of the views of Sir Michael Foster and of Dr. E. H. Starling, who made observations, the former at the military abattoir at Aldershot and both at the Deptford slaughter-house on different methods, while some of its members visited the slaughter-houses of a number of German and Swiss towns with the object of seeing in actual practice the methods which are adopted on the continent.

It is interesting to observe that while in those and some other countries the actual methods of slaughter are prescribed by law in England much more is left to the discretion of the butchers. The model by-laws of the Local Government Board require the butcher "to use such instruments and appliances and adopt such method of slaughtering and otherwise take such precautions as may be requisite to secure the infliction of as little pain or suffering as possible," but the actual method which shall be adopted to secure this object is not prescribed. Hence some differences of method were found to exist especially in respect of the slaughter of sheep.

In England for bullocks the pole-axe is almost always used and the committee expresses its satisfaction with this apparatus when in the hands of a skilled operator. The blow is usually given towards the front of the skull and a cane is then inserted through the hole thus made and the brain and upper part of the spinal cord are destroyed. In some cases the animal is felled by a blow with the pole-axe on the poll and a subsequent blow is given towards the front of the skull directly the animal has

fallen; the cane is then inserted through the front hole as before. With both methods Dr. Starling regarded the death as painless. With regard to the first two bullocks struck by a blow with the pole-axe on the forehead he states: "There is no doubt that in this case death was instantaneous and was preceded by no instant of pain since the shock to the brain, *which is itself sensitive*, would put it out of action before it could feel even the pain of the wound of the skull." Concerning a third bullock struck first on the poll and afterwards on the forehead he states: "I am of opinion that in this case as well death was free from pain though I was not able to test the sensitiveness of the eyes after the first blow and could not be certain that some form of dulled consciousness did not persist till the second blow was given." At Aldershot bullocks were killed by other methods, automatic apparatus being used for the purpose in most instances. The Bruneau mask which provides a bolt which is driven into the forehead by the stroke of a mallet proved satisfactory, as did also the Baxter mask, the Greener cartridge, the Blitz instrument, and the Wackett punch. The hole made by the Greener cartridge was not large enough to admit a cane, a point which, as Dr. Starling points out, is only of importance if the direction of the bullet has not sufficed to destroy the lower part of the brain. With the Baxter mask there was some difficulty in subsequently introducing the pithing cane but with each there was immediate unconsciousness after the blow. The method which was regarded with disapproval by Sir Michael Foster and Dr. Starling and which is condemned by the committee is the method practised in the Jewish slaughter-houses at Deptford of severance of the vessels of the throat without previously making the animal insensible. Incidental to this method are the throwing of the animal on the floor of the slaughter-house, causing in some cases bruising of the surface, and the stretching of the neck before an incision. The report states: "In order to pull the head down in the operation of throwing we noticed that in some cases, at least, one of the men introduced his fingers between the eyeball and upper eyelid and dragged upon the eyeball and upper eyelid in order to force the head back. The head being thus secured, a rope was placed in the mouth round the lower jaw, an iron crowbar was passed through this rope and under the jaw, and by the leverage thus obtained it is possible to extend the animal's head forcibly and to hold it steady while the incision in the neck was made." The actual operation of cutting the throat is then described. The all-important question is, of course, the interval of time which elapses between the making of the incision and the cessation of consciousness of the animal being killed. Dr. Starling, in a first report on the killing of animals at Deptford, states: "In any method of killing we may say that consciousness, which is a function of the *upper* brain, will disappear first; later on the shutting of the eyelid on touching the eye, an act which is carried out by the *lower* brain; and, last of all, the power of movement of the limbs, since this is dependent on the spinal cord. If, in any given method, the sensibility of the eye disappears at any period we may be certain that some time previously consciousness has already disappeared. Where death is more slowly brought about, as by bleeding, some considerable time may elapse before the disappearance of the sensibility of the eye. In this case we may assert from experience on man that consciousness disappears shortly before the onset of general convulsions." In judging of the Jewish method of slaughter Sir Michael Foster and Dr. Starling state that "as indicative of the continued existence of consciousness we regarded the continuation after incision of the movements of escape which the animal had been making immediately before its head was secured for the cut. These were called in our notes *purposive struggles* and are easily distinguished from the spasms due to anæmia of the brain and nerve centres which come on rather later. In the cases where these purposive struggles were absent or prevented by the manner in which the animal's head was fixed we may regard consciousness as disappearing a second or two before the onset of the twitching of the superficial muscles of the animal. Disappearance of the sensibility of the eyeball on the onset of the typical asphyxial spasms always denote that the consciousness of the animal has been abolished some time previously." Using these criteria the reporters give the interval of time which elapsed between the making of the incision and the cessation of consciousness in the case of nine bullocks which they saw slaughtered. This interval of time was probably less than ten seconds in two cases, but in others various greater times up to less than 40 seconds. With respect to the claim of the advocates of this method of slaughter that the wide opening of the vessels of the neck causes such a lowering of blood pressure that the access of blood to the brain is absolutely shut off and that this sudden anæmia of the brain must induce instantaneous loss of consciousness, they say that this is perfectly true provided that the outflow of blood from the divided vessels is sufficiently free—a condition, however, which was only fulfilled in the case of the minority of the nine bullocks which they saw slaughtered. In no case could they regard the Jewish method as of equal humanity with the methods in which a pole-axe is used to secure insensibility which, they point out, supervenes before the pain of the blow itself can be felt.

It is, therefore, not matter for surprise that the committee recommends that the Jewish system of slaughtering should not be permitted in an establishment under Government control. We hope, however, that greater results will accrue from the publication of its report than this and that the many humane Jews in this country will direct their attention to the matter with a view to the adoption of some method which inflicts less suffering upon the animals.

Following the principle of requiring bullocks to be stunned before the knife is used the committee recommends that sheep, calves, and swine should be dealt with in this manner. In England it is the practice to stun calves by a blow with a mallet, but this often follows the hanging up of the animals by the legs and obviously the order of events should be reversed. Pigs, again, in this country are frequently but not always stunned by a blow before being stuck, but this is done not out of regard to the animal but to prevent its squeals being a cause of annoyance to the neighbourhood. The committee recommends that the animal should be stunned to prevent suffering. In the case of sheep it recommends the adoption of the same system and here its recommendations suggest a wide departure from the practice usually adopted of killing sheep in this country. In England sheep are killed by being stuck with a knife which is passed into the neck of the animal; the edge of the knife is inserted between the vertebra and the skull so as to divide the spinal cord, the vessels are cut, and the knife is withdrawn. In practice, however, Dr. Starling states that this was not always found successful and in certain instances the spinal cord was only nicked. The animal was then conscious for some 15 to 20 seconds after division of the vessels. It is sometimes the practice to break the neck after making the incision and the duration of consciousness is then only some ten seconds after the commencement of the operation and would in most cases be only six seconds. Stunning of sheep is, we learn, obligatory in some continental countries but it is not practised in England and the reason may possibly be found in the fact that skill is required for its successful performance. Those of the committee who visited the continental slaughter-houses definitely recommend the adoption of this course but the sheep have to be struck on the proper part of the head, between the ears, or failure results; a blow on the forehead of the sheep is futile. The committee therefore recommends that sheep, as well as all other animals, should be stunned before the knife is used.

Other matters concerning the welfare of the animals to be slaughtered are touched upon in the report. The question whether bullocks brought into the slaughter-house have some sense of their surroundings and of their impending fate is discussed. Upon this the committee could neither, as the result of its own observation nor as the result of the evidence given before it, express any definite view, but it considers that the animals are entitled to the benefit of the doubt and it recommends, therefore, that they shall not be killed in the presence of each other. The proper arrangement of the slaughter-house and the maintenance of absolute cleanliness go far to remove from animals about to be killed the smell and perhaps the sight of matter which may cause them alarm, and the committee includes in its report the plan of the dockyard slaughter-house now being erected at Chatham, in the construction of which due regard is being had to these considerations.

The committee, however, lays stress upon two conditions to which it evidently attaches great importance as affording the best security against the unnecessary suffering of animals at the time of slaughter. The one is that all such animals should be killed in public slaughter-houses where there can be careful observation of the conduct of all concerned in the

business, and the other is that all persons employed in slaughter-houses should be licensed. The need for the adoption of the first of these recommendations has long been insisted upon in our columns in the interest of man, and the other is one which will equally commend itself to those who have sympathy with the lower animals. We shall view with much satisfaction any efforts which are made by the lovers of animals to insure effect being given to the recommendations of the committee, which are evidently based upon careful observation and upon common sense.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

(FROM SPECIAL CORRESPONDENTS.)

THE annual meeting of the Royal Institute of Public Health was this year held at Folkestone from July 21st to 26th, under the presidency of the Earl of RADNOR.

THE OPENING MEETING.

The first meeting on July 21st was held in the Pleasure Gardens Theatre, the proceedings being opened by the Mayor of Folkestone, Councillor GEORGE PEDEN, J.P., who welcomed the delegates and members.

Dr. WILLIAM R. SMITH (London), as President of the Royal Institute of Public Health, gave an account of the mission undertaken by that organisation. It endeavoured to spread the gospel of cleanliness among the poor and among the better classes. The children were of the greatest importance to the community and in this respect he believed that the Midwives Act would prove of great benefit. Every district also should have its nurse and the children should be trained in, and taught, the habits of health. He thought that in dealing with public health questions much could be done to unite more closely the colonies with the mother country and they proposed to create branches of the institute in the colonies. At the conclusion of his speech Dr. SMITH installed the Earl of Radnor as president of the congress.

The Earl of RADNOR replied, expressed his gratification, and alluded to the useful work of the congress. He spoke more especially of the question of milk-supply, on which so much depended, and insisted that this necessitated the spread of the principles of hygiene in rural districts where the milk was contaminated in the cans washed with the impure water of small wells. Indeed, the whole speech was a plea for more sanitation in the country districts that feel the great towns.

In the afternoon the real business of the congress began and the sections met at the Technical Schools. The business of the congress was conducted in five sections: (A) Preventive Medicine; (B) Bacteriology and Chemistry; (C) Engineering and Building Construction; (D) Child Study and School Hygiene; (E) Ladies' Section; and (F) (*a*) Tropical Medicine, and (*b*) Physical Training. In all valuable and instructive papers were read and discussed and the attendance in the Preventive Medicine and Child Study Sections was especially good.

SECTION OF TROPICAL MEDICINE.

Dr. W. J. SIMPSON, professor of hygiene in King's College, London, presided over this section and took for the subject of his address

Preventive Work in the Tropics.

He pointed out that sanitary measures, irrespective of the microscope and the laboratory, had achieved great triumphs. In the West Indies the lifetime of a regiment 1000 strong used to be estimated at about five years. This mortality, first ascribed to the climate, was shown to be due to removable causes and by improving the food-supply and water-supply and remedying the overcrowding a very different condition of things was brought about. In India the death-rate of the soldier had fallen from 80 to 16 per 1000. Dr. Simpson then detailed the great discoveries that had been made in tropical medicine in recent years, in cholera, plague, and Malta fever, in malaria, yellow fever, and sleeping sickness, and discussed the measures that were being taken and the results obtained in the campaign against malaria. Speaking of the Haffkine prophylactic against plague he said he doubted whether a fluid that had to be inoculated would ever be largely used on account of prejudice against this mode of administration and advocated experiment in the direction of finding something that would be efficacious when taken by the mouth.

As a result of the discussion that followed the section adopted this motion:—

That this section of Tropical Medicine recommend the council of the Royal Institute of Public Health that it is desirable to approach the Secretary of State for India and Lord Curzon and lay before them the importance of a largely increased special sanitary service for India.

By request Mr. JAMES CANTLIE (London) then gave an address on

Beri-beri.

At considerable length he described the geographical distribution and treatment of beri-beri, following this up by giving the signs, symptoms, and alleged causes of the disease. In the past no attention had been paid to beri-beri but at the present time a dozen cases could be produced in London. It was peculiar how diseases became fashionable; beri-beri seemed to be fashionable to-day. People who had money invested in South Africa seemed to be paying much attention to beri-beri now and it was a good thing for the Empire, he declared, that at last they had taken notice of one of its greatest scourges. He explained the different types of the disease and mentioned places where beri-beri had largely existed, though under other names.

Dr. ALEXANDER CROMBIE (London) followed with a paper on

The Frequency and Causes of Atonic Dilatation of the Stomach in the Tropics.

This he ascribed especially to the habit of over-drinking at meals, some 50 per cent. of the cases being attributable to this cause alone. As an instance he said that at dinner many men thought nothing of taking half a pint of soup, two pints of aerated water during an otherwise ample dinner, and another pint or two pints of the same within the next one and a half hours. A similar distension of the stomach was practised, to a less degree perhaps, at breakfast and lunch, with the result that the organ in the course of a few years of such treatment accommodated its mechanical capacity to the demand made upon it. Digestion was at the same time delayed by this inordinate dilution of the gastric juice and sooner or later the stomach failed to empty itself before it was again deluged in a similar manner. Other causes were typhoid fever and neurasthenia.

SECTION OF PREVENTIVE MEDICINE.

Dr. W. J. TYSON, senior physician to the Victoria Hospital, Folkestone, presided over this section.

He was followed by Mrs. GARRETT ANDERSON, M.D. (London), who read a most instructive paper on

The Economic Value of Compulsory Vaccination at School Age.

She contended that it would be much cheaper to re-vaccinate than to maintain small-pox isolation hospitals. In Germany there were no small-pox hospitals. At Berlin in the ordinary hospital 12 beds were reserved for the few imported or chance cases of small-pox that might occur and this was for a population nearly half that of London. The British metropolis, counting the capital outlay, spent £30,000 a year for the isolation of cases of small-pox and the average of five years showed that they had only six patients per day to nurse. Unfortunately, and instead of continuing this discussion on the relative cost of isolation and of revaccination, a Mr. ROSE of Sandwich rose to denounce vaccination as "the greatest of frauds" and indulged in violent abuse. This caused other speakers to treat the general question of vaccination instead of the special phase which Mrs. Garrett Anderson had introduced.

Remarks by the President.

Friday morning was devoted to a very interesting discussion on milk preceded by the opening address from the PRESIDENT of the section. He pointed out that by the drainage of some marsh lands Folkestone had been entirely freed from the presence of ague. Much had also been done to reduce the frequency of tuberculosis, but, on the other hand, such a state of things as existed at Sandgate should be rendered impossible. There were present constantly some 300 phthisical patients living in the midst of a population of 2000 inhabitants and this in houses where little or no control was exercised over them. It was a grievance which the section would have to discuss. Then he alluded to the great epidemic of typhoid fever at Maidstone and to the fact that though much had been

done in the surgical treatment of the wounded during the Boer war, a great number of soldiers died from typhoid fever and no serious attempt had been made to provide pure water during the campaign. In regard to cancer, he thought that this disease was treated at the wrong end and that better results would accrue from preventive measures. The infantile mortality was still equal to 1 in 7 within the first year of life. To this the milk question was closely allied and the purity of milk depended upon farmers and dairymen who were not properly controlled by the rural sanitary authorities. To boil and to sterilise milk not only tended to destroy its anti-scorbutic properties but it gave an excuse to the farmers for their carelessness. Finally, the President lamented, in the constitution of school authorities, the absence of technicians in regard to physical education. For such purposes we should possess a Minister of Public Health.

Dr. J. T. C. NASH, medical officer of health of Southend, introduced a discussion on

A Clean Milk-supply.

He said that when the conditions which usually prevailed came to be investigated personally they were found to be such from the cow to the human mouth that any person with even a slight acquaintance with sanitary precepts must wonder at the marvellous natural protective powers of the human economy. The cowshed in the country more often than not was an old wooden structure or barn, insufficiently lighted and ventilated, with unpaved or ill-paved floors and imperfect means of drainage. The cowman, too, was often lacking in every principle of cleanliness. The education of the farmer and the cowman was the primary essential in the production of clean milk-supplies. The public should know that it was possible to secure clean, wholesome milk and should insist and assist in every possible way in securing it. It became necessary to insure systematic methods of cleanliness and expedition in the storage, transit, and distribution of milk. The normal temperature of milk as drawn from the body of the cow was extremely favourable to the rapid growth of bacteria. Therefore it was important to prevent the introduction of further extraneous germs by keeping the milk covered and to arrest the multiplication of existing germs by cooling the milk as soon as possible after it was drawn by passing it through a clean refrigerator or by storing it in an ice cellar. No cowshed should be permitted to continue without a refrigerating apparatus in a separate building within easy access of the cowshed, so that the milk could be cooled down to a temperature of 50° F. at once. The conditions which at present prevailed as to the transit of milk by rail were in need of reform. Special ice vans should be a *sine quâ non*. The importance of covering milk in order to prevent contamination by flies and dust had, perhaps, hardly been sufficiently realised heretofore. Recently the Southend town council had passed a regulation under Article 13 of the Dairies, Cowsheds, and Milkshops Order of 1885, which had been approved by the Local Government Board and read as follows :—

Every retail purveyor of milk shall cause every vessel containing milk to be protected from dust, flies, and other sources of contamination by means of suitable covers.

The Distribution and Sale of Humanised and Sterilised Milk

was the title of a paper by Mr. Councillor SHELMERDINE (Liverpool). He gave an account of the municipal milk depôt in that city and its administration and the details of preparing and distributing the milk. As regarded the results he said that without attempting to draw too close deductions the fact stood out that of the 4453 infants coming very promiscuously to the depôts at varied ages and in conditions of health below the average the mortality was 78 per 1000 as against 159 per 1000 for the whole city. But it must be remembered that in that 159 per 1000 for the whole city and 88 to 118 for the best districts, and 212 to 215 for the worst districts, were included also breast-fed infants; clearly if breast-fed infants were excluded and artificially-fed infants only taken into account the rate of mortality amongst them would be enormously higher, and would show even more forcibly the advantages of the sterilised food which, of course, is an artificial food, over other methods of artificial feeding.

Mr. J. PEARSON, sanitary inspector of Folkestone, read a paper containing the most alarming description of an individual who for more than two years was employed to milk cows in several different towns and farms of Kent. Wherever he went cases of typhoid fever occurred among those who drank the milk of the cows which he tended. Incredible as this may seem, the names and the fullest details were given and typhoid fever only ceased when the man having thus injured his own son's business was persuaded to give up altogether his occupation of tending and milking cows. Mr. Pearson thought that the rural authorities were composed so largely of farmers that nothing would be done unless some higher authority was brought to bear.

Mr. E. J. BISHOP read a paper describing a process of milk sterilisation adopted at Folkestone and showed samples. He was followed by Mr. A. W. SHORT (Bootle), who thought that mothers were too readily blamed for their carelessness. As a rule they were anxious and eager for advice and wished to do the best for their children. The town of Liverpool had done a good work but at a financial loss, for it had incurred in 1900 a deficit of £6310 to provide milk for 6295 children. Also, there was the question of rickets and so on attributable to sterilised milk. At best it was but a partial success. The true solution, he maintained, rested in the municipalisation of the milk-supply. Taking the dairymen's own estimate that the goodwill of a cow was worth £10 and the cows £20 each, for the 60,000 inhabitants of the borough of Bootle this would make a total for the purchase of the present animals of £12,960. A great economy in the distribution of milk would be effected. There would no longer be three or four rival distributors in each street and even if they sold the milk at 1*s.* instead of 1*s.* 3*d.* per gallon they would receive at least £34,127 a year. The sale of manure would raise this income to £36,627. The annual expenditure would be £22,466, leaving £14,161 to pay interest on capital, depreciation, and the like. The net profit would be considerable but the real benefit held in view was that of exercising absolute control over the milk-supply. They might therefore hope to be able to guarantee its purity.

In the discussion which followed Dr. E. W. HOPE (Liverpool) admitted the loss but said that they put health before cost.

Mr. WILLIAM HALL (Headingley, Leeds) said that he had examined 2000 poor Jewish children, dirty slum dwellers, and said that they were far healthier than Christian children living under better sanitary conditions. This was due simply to the fact that they were better fed—namely, from their mother's breasts and not from the bottle.

Sir CHARLES CAMERON insisted that the country dairies were much worse than those of the towns.

Professor M. HAY (Aberdeen) wanted owners of dairies to obtain sanitary certificates which would be of use to them commercially while affording some security to the public.

The general sense of the section was in favour of compulsory inspection organised by a superior authority which could not be influenced by local interests.

The Adulteration of Milk

was the subject of a paper by the Rev. Canon HORSLEY, chairman of the public health committee, Southwark. He dealt with the statistics of adulteration in various towns and concluded that in order to encourage the honest and to discourage the dishonest traders at least four samples should be examined yearly from every dealer.

In the afternoon Dr. C. KILLICK MILLARD, medical officer of health of Leicester, caused some excitement by reading a paper on

The Utility or Otherwise of Isolation Hospitals.

Considerable misapprehension existed and it took some time to dispel false impressions. Dr. Millard did not challenge the use of such hospitals but urged that there had been some abuse in regard to one single disease—namely, scarlet fever. Nor did he mean that no case of scarlet fever should be sent to an isolation hospital. He was in favour of isolation but thought isolation at home was preferable when it could be practised. He gave a number of figures to show that where this had been done the results were quite as good and were attended with less risk to the patient. He therefore advocated an inquiry into the matter and proposed the following motion :—

That as the hospital isolation of scarlet fever has now been tried on a large scale for many years and as some doubt exists as to whether the results obtained are commensurate with the cost, it is desirable, in the public interest, that a full and authoritative inquiry into the subject should be made.

This was seconded by Dr. A. M. FRASER (Portsmouth) in a brief speech.

Mr. T. W. N. BARLOW (Bootle) said that, to his mind, the crux of the whole question lay in the possibility and efficiency

of home isolation and that in towns where home isolation could not be depended upon fever hospitals were indispensable and without them scarlet fever would run riot much as measles did at present.

Mr. H. BEALE COLLINS (Kingston) supported Dr. Millard's view. He said that in Kingston, a town of suburban villas, home isolation could be efficiently carried out as a rule and that it was not necessary to remove more than 7 per cent. of the cases to the hospital.

Dr. KENWOOD dissented from Dr. Millard's views. Perhaps too many cases were now removed to hospital but he regarded hospitals as valuable not only for isolation but also from the point of view of treatment alone.

Dr. SIMPSON said that he had attacked isolation hospitals and their administration but not isolation. He regarded the cubicle system as it obtained in Paris as the ideal one.

On a show of hands the motion was declared carried by 33 votes to 20.

SECTION OF BACTERIOLOGY.

Professor KLEIN, the President, opened the proceedings with an address on

The Aim and Scope of the Bacteriological Analysis of Water and of Shell-fish with reference to Sewage Pollution.

He dealt with the methods, data obtained, and their significance and severely criticised the methods and reports of the metropolitan water examiners.

Dr. R. T. HEWLETT (London) then presented the report of a committee appointed at the last congress to inquire into the standardisation of methods to be employed in the bacteriological examination of water. A committee of representative bacteriologists had carefully considered the subject and had drawn up a scheme which, if adopted, would conduce to a systematic and uniform procedure. On the motion of Dr. Hewlett it was resolved that a copy of the report should be forwarded to the Water Board of London.

Mr. A. G. R. FOULERTON (London) then read a paper on

The Pollution of Tidal Waters by Sewage.

It was a lengthy contribution abounding in analytical and statistical data and an important contribution to the subject. It was briefly discussed by Dr. SAVAGE and the PRESIDENT.

SECTION OF CHILD STUDY AND SCHOOL HYGIENE.

Sir GEORGE KEKEWICH, K.C.B., presided over this section and gave an address on

The Physical Education of Our Children.

He said the subject comprised not merely physical exercises and physical training but the conditions under which children lived both at school and at home. With regard to the schools the Board of Education had not done, and was not now doing, its duty in regard to seeing that suitable buildings were provided. Tenderness for the pockets of the owners of schools meant cruelty to the children. With regard to the expenditure, although there might be no return in actual coin of the realm, it would be a good outlay, inasmuch as the poorhouses and hospitals would be less crowded.

The Teeth of Children in Relation to Public Health

was the subject of a most interesting paper by Mr. J. G. TURNER.

Dr. HARRY CAMPBELL (London) discussed

The Evil Effects of Too Soft a Diet in Children.

He advocated "that the child should begin to take hard solid foods at the seventh month, when he should be allowed to gnaw at chop bones and chicken bones and to eat hard leathery crusts, biscuits, sugar cane, and certain fruits. In this way the instinct to masticate is afforded due opportunity to develop; when the child has learnt to masticate by instinct, and not till then, a limited quantity of the softer farinaceous foods may be permitted."

Dr. T. WHITEHEAD REID (Canterbury) read a suggestive paper on School Food, advocating greater variety and directing attention to the value of chestnuts, banana and wholemeal flours, tripe, vegetable soups, and the like.

LADIES' SECTION.

This section met at the Woodward Institute under the chairmanship of the Countess of RADNOR (the President). Some of the subjects discussed in this section were the appointment of ladies as sanitary inspectors at the same rate of payment as the male officers; a paper on Domestic Hygiene by Dr. CLARA FITTER; Invalid Children's Aid, by Miss MUNNS; and Children's Emigration, by Mrs. CLOSE.

Lady HAMILTON proposed the following motion:—

That the council of the Royal Institute of Public Health be earnestly requested to take into consideration the desirability of steps being at once taken, either through the agency of the municipal corporations or by some other means, of bringing home to the poor a knowledge of the principles of health.

This was seconded and carried.

Councillor HUNT (Acton) read a paper on

Municipal Crèches

and moved—

That this meeting is of opinion that municipal authorities should be empowered to erect and maintain day nurseries for the care of the infants and young children of women employed in day labour, and that for such purpose the Government be petitioned to introduce an adoptive Bill in the next session; that copies of this resolution and Mr. Hunt's papers be sent to the Prime Minister and also to each municipal and local authority with a request to their respective Parliamentary representative to support the Bill.

Councillor BROADBENT (Huddersfield) seconded the motion which was carried.

Excursions.

Saturday was devoted to excursions. Some members of the congress went to Dover, others to Canterbury, but the majority crossed over to Boulogne-sur-Mer. The turbine steamer *The Queen* had been secured for that purpose but as the channel was perfectly smooth there was no opportunity of testing the sea qualities of this magnificent ship. The splendid weather, however, contributed largely to the enjoyment of the trip. The Mayor of Boulogne was awaiting the arrival of the ship on the quay together with a band to play the national anthems of both countries and a large crowd received the visitors with cheers. Lunch and toasts at the Casino further cemented the bonds of amity between the two countries and the two towns which face each other across the Channel. The municipality of Boulogne offered tea to the visitors at the Hôtel du Nord prior to their departure and altogether a most enjoyable day was experienced by the 360 excursionists who availed themselves of this opportunity.

SECTION OF PREVENTIVE MEDICINE.

The Debate on Sanatoriums for Pulmonary Tuberculosis and the Sandgate Scandal.

On Monday Dr. NATHAN RAW (Liverpool) read a paper introducing the question of Sanatoriums for Consumptives. He insisted on the necessity of organised effort being made by public bodies, such as municipalities, county councils, boards of guardians, and others, so that such institutions might be created. They had an excellent educational effect but the treatment "must be carried out under the direct supervision of a medical man specially trained for this special work." He then insisted on the selection of a suitable site on a high altitude and well away from smoke and other impurities. The incapacity to work caused by phthisis cost London over £4,000,000 per annum and he had calculated that the working classes of Liverpool lost annually in wages through being invalided by this disease at least £300,000. But in Germany much of this loss had been saved owing to the fact that from 68 to 74 per cent. out of 27,176 patients treated in sanatoriums had been able to return to work. He thought that the health authorities had ample power under the Public Health Act to deal with consumption and the county councils could also proceed in the matter under the Isolation Hospitals Acts. In conclusion, he denounced the present practice of calling anything a sanatorium. This led to disappointment, because the results in unsuitable places were not encouraging and the public had been led to expect too much from sanatoriums. Nevertheless, they constituted the best treatment medical science could offer to-day, though they could only be successful in selected cases.

Mr. ADOLPHE SMITH was invited to speak next. He said that they had close to them, at Sandgate, so-called sanatoriums for the treatment of tuberculous disease which in no wise answered to the description given by the opening paper. Dr. Raw claimed that such sanatoriums should be managed by medical specialists but at Sandgate no medical man was responsible. The British law sought to prevent the people from resorting to quacks. British boards of guardians, in carrying out the Poor-law, sent patients to the homes at Sandgate which were managed by absolutely unqualified persons. The Jones's homes at Sandgate professed to give outdoor treatment but it was out-in-the-street treatment, where the pure air consisted of the maximum supply of motor-car dust. In Germany extensive experience showed that sanatoriums cost £200 per bed and more than

4s. per day per patient; altogether and all told from £90 to £100 a year. At Sandgate only a guinea a week was paid and out of this a profit was made. The speaker strongly denounced the running of such enterprises for profit and the trading on the miseries of the poor.

Mr. L. J. D. BROCKMAN, speaking as a lawyer living at Sandgate, explained that nothing could be done till medical science had spoken. It was necessary that tuberculosis should be defined as a dangerous and notifiable disease. They could not deal with the internal arrangements of a house unless the nuisance therein created became an external nuisance. But if tuberculosis could be qualified and recognised as infectious they would have a right of entry, of removal of patient, of disinfection and of isolation. But even then it would be necessary to define what was a hospital, for the Act did not apply to hospitals.

Dr. C. E. PERRY, medical officer of health of Sandgate, now rose first to express his thanks to THE LANCET for all that journal had done to help them to get rid of a serious grievance. The utility of sanatoriums depended on their management and he knew personally several cases where great benefit had resulted. But this was due to the situation of the sanatoriums and the excellence of their management. At Sandgate the Jones's homes were in the main street; they had no gardens and the patients mingled with the general population. On the Riviera the general population had suffered from the presence of such phthisical patients who went to winter in the south. Now the hotels refused to receive people suffering from tuberculosis and they were sent to a splendid sanatorium built right away up on the hills behind Mentone. Dr. Perry also thought it was wrong to run homes for private gain. They should be constructed by the public authorities and paid for out of the poor rates.

Mr. S. BACON, town councillor, from Poplar, agreed that the homes at Sandgate, where some of the poor from Poplar had been sent, were unsuitable for the purpose, but the London guardians did not know where to find suitable homes. Some time ago the guardians held a meeting at St. Martin's Hall to discuss what measures could be taken for the metropolis in this matter. They received expressions of sympathy from all sides but nothing was done; so they remained with no choice but Sandgate or the workhouse. The difficulty was to treat London bread-winners in the early state of the disease. They naturally would not leave off work to go to a workhouse and be pauperised, but there would be less objection to go to a hospital or a sanatorium where there would be no degrading conditions.

Dr. MILLARD said that at Leicester they used a ward of their fever hospital, which had 20 beds, for the treatment of tuberculosis.

Dr. BARLOW questioned the usefulness of sanatoriums for tuberculosis and Canon HORSLEY said that at Southwark they had left off sending their cases to Sandgate and this now for several years. Nothing effective would be done unless there were compulsory powers and the poor would only believe that the disease was dangerous when they saw disinfection enforced. But even if a man was sent to a sanatorium he would soon fall ill again when he went back to his wretched home. General hygiene would do more than special sanatoriums.

Dr. W. F. DEARDEN (Manchester) said that to send patients to Sandgate was no better than to leap from the frying-pan into the fire. People would go to a good hospital but not to a workhouse infirmary. At Manchester they were subsidising, by retaining and paying for a certain number of beds, a large hospital that was in course of construction outside the town. This would constitute a sort of municipal sanatorium.

Councillor B. HOBBIS, Mayor of Maidenhead, alluded to the action of the great friendly societies. They had sent a deputation to Germany which reported favourably in regard to the sanatoriums for the treatment of phthisis. Nevertheless the friendly societies had not moved in the matter. If the truth must be told it was not in their interest that sick members should live long. Those members who returned from sanatoriums patched up but disposed to fall ill again cost too dear. The friendly societies contented themselves with dealing with this matter as they had dealt with the question of old age pensions—they handed over the problem to the State.

Dr. J. C. MCWALTER (Dublin) said that the question had been much discussed in Ireland and the feeling was that sanatoriums for tuberculosis were considered to be too expensive as their results were of doubtful benefit. They produced apparent cures but the patient soon relapsed when he returned to slum life. Where better results were shown it was because patients had been taken at such an early stage that in ordinary circumstances they would hardly have been considered as invalids.

Dr. G. HOLLIES insisted that if the patient had a suitable home as much could be done for him in his own dwelling as in a sanatorium.

Dr. J. WRIGHT MASON (Hull) inquired who was to supply the sanatoriums. He thought that this should be done by the municipalities but he was opposed to palatial buildings and great expenditure. If outdoor treatment was required then nothing was better than tents and they did not cost much.

Dr. RAW in his reply regretted that the question of the homes at Sandgate had been introduced. He knew nothing about them and could not therefore deal with that phase of the subject. What he wanted to bring forward was the fact that pulmonary tuberculosis was infectious and was curable and that sanatoriums constituted the best means of effecting such cures. As for the question of expense, under the Poor-law and solely for the treatment of phthisis £1,000,000 were now being spent annually. Surely it would be better to devote this money to sanatoriums even if they only restored the patients to their work for two or three years.

Dr. PERRY rose at the conclusion of the reply to suggest that some motion summarising the opinions expressed should be submitted before passing on to another subject.

Mr. ADOLPHE SMITH thereupon moved the following:—

> That homes or sanatoriums for the aggregation and treatment of tuberculous patients should stand in their own grounds in an isolated position away from the general population and be placed under the absolute control of fully qualified medical practitioners.

Dr. PERRY seconded this motion.

Mr. BACON objected. He did not see the need of such a motion; it tied people's hands and therefore he moved the previous question.

No one, however, could be found to second the previous question, so the motion was put and carried by a large majority. This brought the debate to its logical conclusion.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was held in London on July 21st and 22nd. The presidential address was delivered by Dr. R. PERCY SMITH who chose for his subject Paranoia, its position as a clinical entity and its relationship to other mental disorders. Paranoia as a term to describe a certain primary cause of insanity was first used by Kahlbaum in 1874 and since then by Mendel (1881), Spitzka (1887), and others. The death in 1886 of King Ludwig II. of Bavaria, who was a life-long victim of this form of mental disorder, served to draw increased attention to the study of paranoia. The medical certificate of death, signed by four specialists in mental disease, referred to the king as having suffered from "that form of mental disease which is well known to alienists and physicians of experience as paranoia." The term "paranoia" had, however, though largely and widely employed by alienists in Europe and America, received scant attention in Great Britain, no mention being made of it in the writings of alienists of the older school. Thus, it was not mentioned in the text-books of Savage (1884) or Bevan Lewis (1889). Clouston (1892) referred to it in a brief paragraph in the third edition of his work and the late Dr. Hack Tuke gave an account of paranoia in the "Dictionary of Psychological Medicine" (1892). At first some confusion prevailed in the use of the term, since some authors did not discriminate between this grave constitutional, progressive, chronic disease of the mind and other acute mental disturbances which only superficially resembled it but had nothing in common with it as regards fundamental characters and mode of evolution of symptoms. Thus, in addition to the original paranoia (the *primäre Verrücktheit* of German authors and the *délire chronique à évolution systématique* of French writers), which was a chronic and incurable disease running a definite course of several years' duration, a motley group of acute affections classed

together under the term "acute paranoia" was included under paranoia by various writers, with the result that instead of clearness and discrimination much confusion had resulted. In the last decade, however, mainly owing to the work and writings of Krafft-Ebing, Magnan, Kraepelin, and others, and the growth of a broader and essentially different standpoint adopted in the investigation and classification of the insanities from the evolutionary and prognostic aspects, the conception of paranoia had grown clearer and its position in the scheme of the insanities was better defined. Cramer, who a few years ago summarised the history of the subject, pointed out the essential unity of the modern view of paranoia as developed by Magnan and Kraepelin. He referred but little to English writers and evidently was inclined to regard their views as obsolete. He said that Italian investigators had either followed the French or the German school, which remark might be applied to the younger rising school of psychiatry in the United States. Dr. Smith then dealt with the question, long debated by alienists, as to whether paranoia in the proper sense (i.e., excluding the so-called acute paranoia, a term which was fast dying out) was primarily a disorder of the affective side of mind (the sphere of feeling and emotion) or of the intellectual process and after a lengthy survey of the facts and arguments available came to the conclusion that the former view of its pathogenesis must be considered the correct one. Krafft-Ebing in the latest (1903) edition of his "Lehrbuch" classified paranoia under the subdivision Psychical Degenerations (which included katatonia, *folie raisonnante*, paranoia, and periodic insanity), as distinguished from the psycho-neuroses (which included melancholia, mania, primary (curable) dementia, hallucinatory delirium, and the secondary delusional and terminal dementias). Kraepelin had recently described a paranoid form of dementia præcox, a somewhat rare variety of the insanity of adolescents, presenting a superficial resemblance to paranoia but nevertheless essentially distinct therefrom. Dr. Smith concluded by stating his own view that paranoia was a chronic insanity marked by a stage of systematised delusions, whether of persecution or of exaltation variously combined, that it originated in youth, adolescence, or early adult life, and was more or less associated with a basis of heredity (neuropathic or psychopathic), that the disturbance of the mind was *abinitio* probably in the affective sphere, and that it was etiologically and clinically different and distinct from acute states of delirium and mental confusion or collapse-delirium, and from secondary states of fixed delusions occurring after attacks of acute insanities.

Dr. G. E. SHUTTLEWORTH read a paper on the Educational Treatment of Young Epileptics. He referred to the passing of the Act of 1898 for the education of epileptic children which enabled the local authorities to provide farm colonies and schools for the care, training, and treatment of young epileptic children. In institutions such children could be brought up in a life of relative usefulness and by the provision of workshops and the teaching of handicrafts to the inmates (such as knitting, needlework, fretwork, basket-making, and farming) the institution could be rendered in a measure self-supporting. He adduced the epileptic colony at Chalfont St. Peter, Bucks, as a typical example. Other institutions were also in course of erection or had been recently completed and opened for the reception of patients at Much Hadham (Herts) and in Cheshire. He was of opinion that accommodation for about 3000 inmates was required for this class of cases in England, while the existing institutions did not provide for more than about 400. The education given in the schools and classes attached to these institutions included physical drill and games involving moderate muscular exercise. Idleness was as bad for the epileptic as for the healthy child. Epilepsy *per se* did not, and in his opinion should not, disqualify a child from the benefits of elementary education. He was strongly of opinion that a physician should be called in to examine and to certify a child suffering from epilepsy as to whether the child was a suitable subject for school or farm colony education and training. Class teaching was better for epileptic children than solitary instruction and corporal punishment should never be administered. Games in the open air were of great benefit to epileptics. Dieting and a proper regulation of the bowels were important matters and the judicious use of some doses of alkaline bromides was often attended with benefit.—In the discussion following the above communication Dr. G. H. SAVAGE stated that medical supervision and dietetic and medicinal treatment in the form referred to above should be the chief agencies for the treatment of epileptic children. Education and training, whether scholastic or manual, should not be prolonged over two and a half or three hours per diem.—Dr. HENRY RAYNER deprecated the regular use of bromides and referred to the greater importance of diet and the regulation of the bowels in the treatment of patients. A few cases of epilepsy tended to improve before puberty or the period of the second dentition.—Dr. J. MILSON RHODES spoke of the insufficient provision for epileptics in this country as compared with the United States and the continent. Schools for epileptics should have plenty of land and playground for the inmates.—Dr. ROBERT JONES spoke in favour of the use of bromides in epilepsy.—Dr. W. LLOYD ANDRIEZEN would not recommend the use of bromide of potassium since potassium was a cardiac depressant. He always used the salts of sodium and ammonium and had found a combination of ammonium bromide (from 10 to 15 grains) and antipyrin (five grains) more effective in removing stupor and dulness and irritable temper of the patients than potassium bromide.

Dr. C. H. BOND read a paper on the Study of the Body-weight in Relation to Mental Disease. He had systematically adopted a plan of weekly weighing of patients suffering from certain forms of insanity at the Horton Asylum and found the curve of weights plotted on the charts a valuable indication having a prognostic value.

The meeting then closed for the day.

At the resumption of the meeting on the following day (July 22nd) Dr. A. W. CAMPBELL gave a lantern demonstration with description of the appearances of various parts of the Cerebral Cortex of Man and Mammals, the histological differences of structure being associated with the localisation of function in the various cerebral areas. The discovery of Flechsig with regard to the presence of "association centres" in the brain was upheld and its important bearing on our future knowledge of neurology and psychology was pointed out.

Dr. JOHN TURNER, assistant medical officer of the Essex County Asylum, read a paper on the Anatomy of the Nervous System, with special reference to the doctrine of continuity of the neurons. Lantern slides were shown illustrating the pericellular networks of fibrils surrounding the large pyramidal cells of the cortex, which were mainly composed of the branching terminals of a class of small nerve cells designated "dark-staining" or "intercalary" cells. This, said Dr. Turner, was an anatomical fact but he could not as yet point out its physiological or psychological significance.

Dr. W. H. B. STODDART read a paper, illustrated with numerous excellent diagrams and stereoscopic slides, on the Psychology of Hallucinations in which an attempt was made to explain the mechanism underlying illusions, hallucinations, and delusions, and to estimate the extent to which the ideational element (as distinguished from the merely peripheral stimulus) entered into the composition of these respective states.

Dr. G. M. ROBERTSON, medical superintendent of Larbert Asylum, Scotland, read a paper dealing with the Treatment of Lunatics in Modern Asylums in contrast with the conditions which prevailed 60 years ago.

Dr. J. CARSWELL read a paper dealing with the Provision for the Care and Treatment of the Occurring Pauper Lunacy of Glasgow and expressed his belief that lunacy was not on the increase in Glasgow.

Dr. RHODES read a paper on the Question of how to provide Accommodation for Chronic and Incurable Cases of Mental Disorder, referring to the provision made on the continent as compared with that in England.

The proceedings then terminated.

THE SOCIAL AND ECONOMIC POSITION OF MEDICAL PRACTICE ON THE CONTINENT.

(*Continued from p. 254.*)

IN our first article under this heading we dealt with the information supplied from Austria and Germany and we now pass on to consider the situation existing in France. It will be remembered that we sent a series of six queries to trustworthy quarters in the various countries, these queries being

designed to elicit opinions relative (1) to the satisfaction or otherwise of the profession with their social status and pecuniary returns; (2) to the existence of a distinction between general practitioners and specialists or consultants; (3) to overcrowding; (4) to contract work; (5) to the legality or otherwise of unqualified practice; and (6) to hospital abuse.

FRANCE.

1. There is among medical men generally an evident feeling that their position is not what it ought to be and that something is wrong somewhere. This is due not to any want of consideration for the medical profession on the part of contemporary society but to the inadequate remuneration obtainable from medical practice. The profession enjoys a real influence in French society; medical men have occupied almost every position connected with the government of the country and have been recipients of honours of all kinds. The jokes of which they are often the object in stage plays and novels are no more than proofs that this influence is in certain quarters regarded enviously. From the point of view of material prosperity things are, however, quite otherwise, because the general idea to-day is that a medical man is an individual either having private means for pursuing his studies or else making much money, which is unfortunately only true of a dozen Parisian consulting physicians to whom the public constantly point when the others complain of their lot. Under the influence of this idea the medical profession has been loaded down by the heaviest taxes, one-twelfth of the price of rent, doubled in Paris by municipal taxes. These taxes fall more heavily on the medical man because his rent is necessarily high in order that he may have a house in accordance with the requirements of his patients rather than with his personal needs, a circumstance which hardly exists in other professions. From the social point of view the medical man is burdened with heavier obligations than a member of any other profession. The increasing tendency of the democratic ideal is to give free medical attendance to a larger and larger number in the social category, workmen, employés, and so on; every large organisation causes a crowd of individuals to be cared for at its expense by a single medical man whom it pays at the lowest possible rate, an indifferent post which is always accepted by a beginner and which goes on from beginner to beginner, unless the bait of a decoration at the end of 20 years of this voluntary servitude induces some practitioner to hold the appointment permanently. In fact the number of people who pay their medical attendant is gradually decreasing from all these causes while the number of practitioners is increasing. Even among patients belonging to the middle and upper middle classes every medical man attends his relatives and his intimate friends gratis which is a loss not for him but for the others. It is thus easy to calculate that in Paris of 2,714,000 inhabitants one-half avoid paying any medical fees at all, 1,000,000 only pay a nominal price, and there remain hardly 200,000 families constituting the real practice of the 3342 existing physicians, each of whom has to attend at least 20 well-to-do persons gratuitously on account of being relatives or friends, so that the total figure is thereby reduced by about 60,000. The patronage of foreigners and of travellers makes, fortunately, a certain compensation and foreign medical men desirous of competing with the French practitioners in this branch of practice spare no pains in order that they may be able to take part in it. The general idea according to which the medical man makes a large income is so widely spread that when there is a question of fees between a practitioner and his patient the courts decide against the medical man who scarcely dares to claim his due where it is refused him.

2. There is not a very sharp line drawn between general or family practitioners and hospital physicians. The latter, in fact, are ready to become family attendants to wealthy households because their number has grown so great on account of the increase of hospitals that they cannot live as comfortably as they wish while confining themselves to the position of consultants. There are even young hospital surgeons who do not hesitate to engage in general practice. In reality everyone does what he can to extend his practice and there is only a small number of specialists who are real slaves to their specialty and who refuse to undertake whatever comes to them. One barrier exists between the two classes of practitioners, it is a sort of fellow feeling, such that a hospital physician having a patient to send to another practitioner never sends him to any but another hospital physician.

3. There is evidently a superabundance of medical men. The actual proportion is 18,871 medical men for 39,000,000 inhabitants, or one medical man for 2066 inhabitants. This enormous number is due to two causes, first, the exemption from two years of military service out of three which benefits medical students, and, secondly, a considerable influx of foreign students, especially Russians and Roumanians. Since a year ago there has been an abatement in this, because foreign students are no longer permitted to dispense with part of the examination imposed on French students. To be more exact, this favour is only granted now to those who wish for the French diploma without meaning to practise in France. For those who wish to practise in France the same preliminary examinations are required as for the French students. When this regulation came into force the numbers of these foreign candidates immediately decreased.

4. Special contracts are made by certain societies or associations with medical men to the effect that all their members shall be attended by the year for a fixed sum. The details of the arrangement vary: the medical man may either receive a certain sum for attending a number of individuals whatever visits he may make during the year, or he may receive a fixed sum with the addition of one or two francs for each member, or he may receive a small sum besides for each visit. These organisations, of which the friendly societies (*sociétés de secours mutuels*) represent the most formidable type, are one of the principal causes of the weakening of the medical profession, particularly in the provinces. When there is only one medical man in a district it is not unusual to find the people forming in this way a veritable combination against him. Half of the population is enrolled in a friendly society from which the unfortunate man only draws a reduced tariff, while to the other half which is classed as indigent he gives free medical attendance in exchange for an honorary title. In agreements of this kind the medical man's time is his own, except that which is required for the work of the society; it is very rare for a practitioner to hold such an appointment on condition that he does not accept other patients.

5. There are laws against quackery but they are hardly ever enforced; almost all quacks when they are prosecuted find defenders who set in motion political influences thanks to which the judges abstain from convicting them or only condemn them to ridiculous penalties which are by no means deterrent. According to the law, no man may be called doctor unless he is in possession of the diploma of doctor of medicine. However, difficulties have arisen since the recent creation of the diploma of doctor of pharmacy, the holders of which diploma naturally seek to avail themselves of the confusion. In the lower category, that of the so-called health officers, suppressed ten years ago as regards new entries, but of which there still exist more than 1200 representatives, the usurpation of the title of doctor is frequent. A singular legal decision has even put them in the right by stating that since they had the right to practise medicine they did not act illegally by taking this title and could only be punished by a trifling fine for causing themselves to be mistaken for the other doctors.

6. One sees, unfortunately, only too many people making use of the hospitals who might pay their medical attendants the usual fees. Public opinion tends to confound salaried people of every sort with the really poor and to claim for them the same privileges. Charity is thus diverted from its true end and becoming a means of economy is nothing but a swindle. The abuses have become such that a certificate of poverty or the production of a rate or tax paper proving that the individual does not pay more than a certain sum in rates or taxes is now required both for out-patients and in-patients. But many abuses still exist, particularly in surgical cases, and it is, sad to say, often the medical men themselves who cause them by giving letters of introduction to the surgeon to patients whom they wish to oblige by helping their economies at the expense of their *confrères*.

Finally, there are enormous abuses in the sending to the hospitals of workmen injured by accidents during work. These workmen by receiving benefits from the rich assurance companies ought not to be regarded as poor persons having a claim to free medical attendance.

Obituary.

SIR JOHN SIMON, K.C.B., F.R.S., D.C.L. OXON., LL.D. CANTAB. & EDIN., M.D. (HON.) DUB., M.D. ET CHIR. (HON.) MUNICH,

FELLOW AND PAST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; FELLOW AND PAST VICE-PRESIDENT OF THE ROYAL SOCIETY; PAST PRESIDENT OF THE PATHOLOGICAL SOCIETY OF LONDON; FORMERLY MEDICAL OFFICER OF HER MAJESTY'S PRIVY COUNCIL AND CROWN MEMBER OF THE GENERAL MEDICAL COUNCIL; BUCHANAN MEDALLIST OF THE ROYAL SOCIETY.

John Simon, who did more than any other worker of the Victorian era to prevent disease and to prolong life, afforded in his own person an excellent example of the principles which he so strenuously and so fearlessly inculcated. Born in the second decade of the last century, after a career of altogether exceptional brilliancy and usefulness he has passed away in 1904 at the advanced age of 88 years. He had outlived all his fellow workers and there is practically no one left to tell at first hand the story of his life. Even to many of our oldest medical officers of health the name of Sir John Simon is little more than an honoured expression, while in the case of the younger generation of officials and of students of hygiene it is associated in somewhat nebulous fashion with the earliest battles which were waged by sanitary science and administration against preventable mortality and suffering.

Fortunately for history, and as if, indeed, John Simon foresaw that none of his immediate contemporaries would be left to tell in detail of his battles, he has left behind him what will for all time be regarded as a classic contribution to the progress of preventive medicine in this country. Simon's "English Sanitary Institutions" contains not only the story of his own work but also a record of the labours of all those who since the beginning of real sanitary progress in this country have taken a leading part in the fight. As a literary production this volume is of the highest order and the true beauty of its language and the broad humanity of its teaching can be best appreciated by those whose ideals lead them in the direction in which Simon's thoughts and aspirations tended. Simon has died what he himself would have termed a natural death. As, indeed, he tells us in the annual report of the General Board of Health for 1858:—

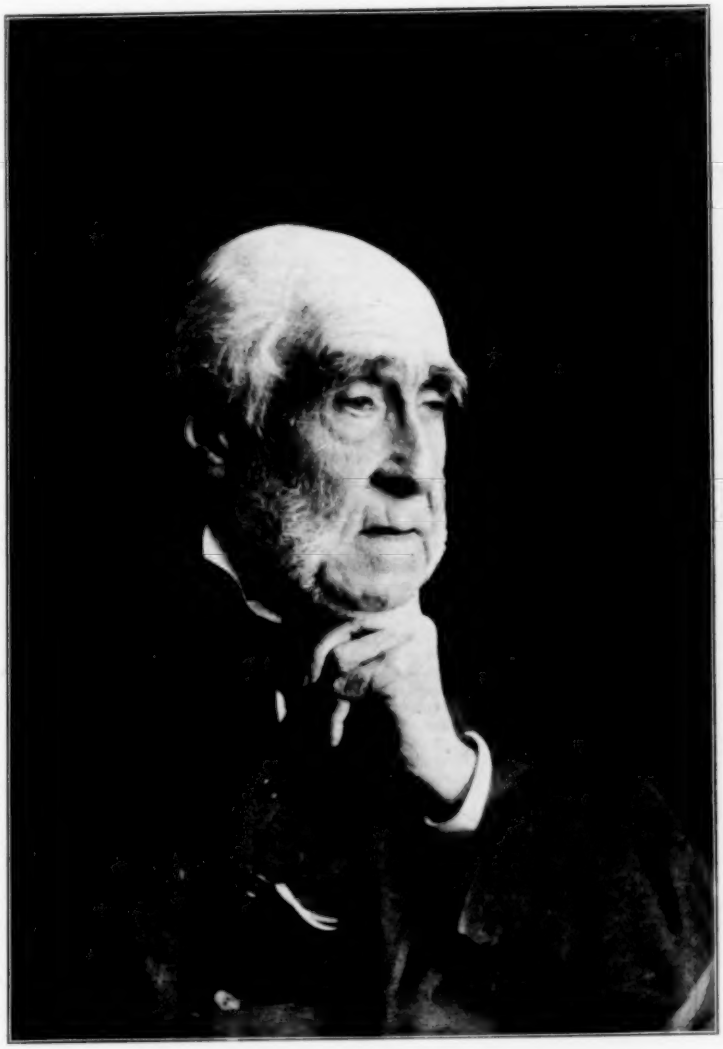
> *Death by old age* is, physiologically speaking, the only normal death of man. ..... Death virtually by old age comes to some men even before their sixtieth year. To most men it comes much later. A few complete their fifth vicennial and even carry far into it their noblest mental endowments. ..... And it cannot be far from the truth to assume that, even if there were no artificial interference with the duration of life, death by natural decay would in this country under its present circumstances usually happen at about 80 years of age. Now little more than a tenth part of the deaths of England happen at 75 years and upwards and thus, physiologically speaking, one may say that at least nine-tenths of the entire mortality occurs more or less prematurely.

Simon, who was the last of the 14 children of the late Louis Michael Simon, of Blackheath and the Stock Exchange, was of Anglo-French descent. His early education was obtained at a preparatory school at Pentonville and afterwards at Greenwich. Subsequently he was sent into the family of a German pastor at Hohensolms and after a sojourn there of less than a year he was in 1833 apprenticed to Mr. Joseph Henry Green, the first professor of surgery at King's College and surgeon to St. Thomas's Hospital. In 1838 he took the Membership of the Royal College of Surgeons of England, and two years later was appointed assistant surgeon to King's College Hospital. Five years later, and at an exceptionally early age, the blue riband of science was conferred upon him, for he was elected a Fellow of the Royal Society as a result of a paper on the Comparative Anatomy of the Thyroid Gland; and two years later, in 1847, he was appointed lecturer on surgery at St. Thomas's Hospital. Before this date he had contributed articles and papers on scientific, social, and philosophic subjects which bore evidence that he possessed a genius which tended especially in the direction of a remarkable power of concentration and generalisation in connexion with social and scientific subjects.

Before dealing with the work with which Simon's name will always be associated it is necessary that some idea should be conveyed of the sanitary condition of the people at the period when this work commenced. Edwin Chadwick's labours had really begun about ten years before Simon joined the ranks of the medical profession and in 1832 Chadwick had been appointed one of the assistant commissioners to inquire into the working of the Poor-laws. In this capacity his signal abilities were soon manifest and shortly afterwards he became secretary of the newly created Poor-law Commission. It was the work of this commission and of Dr. Neil Arnott, Dr. Southwood Smith, and Dr. J. P. Kay, the medical inspectors connected with it, which first drew the attention of the public and of Parliament to the eminently unwholesome conditions under which the poor of this country lived and laboured, and a synopsis which Chadwick compiled from the elaborate reports of the medical inspectors and which he termed a "General Report on the Sanitary Condition of the Labouring People of Great Britain" led in its turn to the appointment of a Royal Commission to inquire into the allegations there set forth. The Commission issued its final report in 1845 and the recommendations which accompanied that report were, as is now well known, the work of Chadwick himself; indeed, the Commission, in place of treating Chadwick as a reporter whose facts and inferences were the subject of an inquiry, soon appreciated his work and worth and welcomed him as a collaborator and adviser. The report of this Commission was responsible for the passing of the Public Health Act, 1848, and the creation of the General Board of Health, and shortly afterwards there was additional legislation to provide for the care of the metropolis which was exempted from the operations of the Public Health Act of 1848. But the General Board of Health did not yet number among its members a medical man, and it was not until two years afterwards, under the dread of approaching cholera and under the cloak of the Interments Act, that power was given to add a medical man to the *personnel* of the Board, when Dr. Southwood Smith was elected to the office. This ludicrous association of a medical man with the Interments Acts called forth from Dr. Rumsey the following caustic criticism:—

> Who would have thought that in the last decade of advancing civilisation and in a nation boasting of its intellectual and material resources, of its administrative energy and efficiency, the whimsical experiment should have been actually tried of appointing three non-medical authorities—two lords and a barrister—to preserve the health of the living, and then, after a year or so of doubtful success, calling in a physician to bury the dead?

But despite this lay antagonism to the medical profession—an antagonism which is still occasionally to be found in official circles—the public conscience was awakening. Voluntary bodies having for their object the amelioration of the unwholesome condition of the poor were being formed, and in 1850 there was founded the Epidemiological Society of London to study the causes which led to premature death and preventable disease and to advise administrative bodies thereupon. Among the founders of this society were practically all the leading scientific spirits of the day and the last survivor of that little band has just passed away in the person of Sir John Simon. The development of the idea of prevention which was taking place at this time was admirably represented by Lord Palmerston when, in response to an appeal to appoint a great religious fast in consequence of the advent of Asiatic cholera, he wrote: "It did not appear to Lord Palmerston that a national fast would be suitable to the circumstances of the present moment. The Maker of the universe established certain laws of nature for the planet in which we live; and the weal or woe of mankind depends upon the observance or neglect of those laws." But this powerful advocacy notwithstanding, all did not go well with the General Board of Health. The Board was in effect Chadwick and he, with all his intense earnestness, had not the scientific knowledge or the tact to appreciate the case of his opponents. A powerful reaction against what was regarded as his too masterful policy was the result and such reaction soon ended in disaster. According to the provisions of the Act of 1848 the Board was to continue to operate for five years, but in 1854, after a long debate during which much vituperation was levelled against Chadwick, the Government was defeated on a proposal to renew the Act. Subsequently, however, a modified Act was passed which was subject to annual renewal and which constituted a new Board of Health, consisting in point of fact of a president who was provided with certain expert advisers. Sir John Simon in his "Institutions" discusses with eminent fairness and sympathy the circumstances which in effect brought the



SIR JOHN SIMON, K.C.B., F.R.S.

first Board of Health to its end, summing up in these words :—

> Mr. Chadwick beyond any man of his time knew what large fresh additions of human misery were accruing day by day under this almost universal prevalence of sanitary neglect and the indignation which he was entitled to feel at the spectacle of so much needless human suffering is a not ignoble excuse for such signs of over-eagerness as he may have shown.

By this unfortunate termination of the first General Board of Health the services of both Mr. Chadwick and Dr. Southwood Smith, the first medical member of the Board, came to an end. At this juncture Simon became the principal actor on the scene. Simon owed his first appointment in the sphere of prevention to the fact that even at that remote period local authorities were able by means of Acts of Parliament to provide themselves with special powers, and in accordance with the recommendation of the Health of Towns Commission, a few cities were beginning to appoint medical officers of health. To the town council of the city of Liverpool belongs the honour of having in 1847 appointed the first official of this class, and in 1848 the Corporation of London was fortunate enough to secure Simon's services in a like capacity.

Although his City appointment had attached to it a few loosely defined statutory duties the conception of a medical officer of health was entirely new and the office was practically what its first holder chose to make it. Simon went to work on lines which are now familiar enough but which in those days were entirely novel. Almost the first step was to obtain information as to mortality. By a voluntary arrangement he secured weekly returns of certified deaths from the nine City registrars, and by a similar arrangement he afterwards obtained weekly returns of sickness from the 11 Poor-law medical officers of the City. With the aid of these returns a routine of weekly inspections was instituted, at first restricted to particular premises where certain sorts of disease or death had occurred but afterwards developed to a methodical sanitary superintendence of all the poorer parts of the City, at that time including some 7000 inhabited houses. The overcrowding which then existed among the poor population of the City and elsewhere in London was habitually of the grossest description. Many courts, alleys, and individual dwellings teeming with inhabitants were totally unfit for habitation; light and ventilation were still hindered by the window-tax; there existed no provision whatever against the spread of infectious diseases, typhus fever was common, and the death-rate, judged by modern town standards, was appallingly high. Water was delivered unfiltered. Much of it was either fetched from standpipes or stored within the dwelling in cisterns and receptacles of the most objectionable kind. The sewage of London was discharged directly into the Thames. There were some 130 slaughter-houses within the City boundaries, nearly half of which were underground vaults and cellars. Burials still took place in City graveyards and, among the poor, bodies of persons who had died from infectious disease were habitually kept in the room a week or more before burial. The adulterations of food, which about that time were being exposed by THE LANCET Analytical Commission, were common there as elsewhere in London and were altogether uncontrolled, while no sort of check was exercised over unwholesome or dangerous conditions of labour which abounded. The medical knowledge of the time could throw very little light upon the manner in which many of these objectionable conditions operated to produce unhealthiness and death, but Simon had no lack of evidence of the fact that they did so. During his tenure of office much was done by the City authorities on his advice in the direction of improvements in sewerage and water-supply, by the enforcement of periodical house cleansing, by the far stricter practice of scavenging, and by the general mitigation of "nuisances." In particular the abolition of cess-pools was secured and Simon congratulated the Corporation that in 1855, at a time "when cess-pools were still almost universal in the metropolis, and while in the mansions of the West-end they were regarded as equally sacred with the wine cellars, they had been abolished, for rich and poor, throughout all the square mile of the City."

The effect of Simon's work as medical officer of health was far more than local. His annual reports, which cover the years 1848 to 1855, form a landmark in the history of English sanitation. They gave the result of systematic surveys of the general sanitary circumstances of the City and of the risks arising from cholera and other diseases, they ventilated questions of housing and other social conditions of the labouring classes, and they poured a flood of light upon a great variety of other matters affecting health. They showed the causes of the evils described and the ways in which they could be remedied. The subjects thus dealt with were then unfamiliar. For many it was a new way of looking at social questions. The sufferings and the degradation which were incurred through the conditions of life of a large section of the labouring classes were not realised and it needed writings like Simon's to show how vain it must be to expect good social fruit from human life which has to run its course under such conditions. These reports, written in the masterly terse English for which Simon was always famous, took hold of the public imagination and were in demand in many quarters. They were subsequently republished with a valuable preface, written in anticipation of a future reorganisation of the General Board of Health, entitled "A Ministry of Public Health." In this essay Simon foreshadowed the ideal to which later he was to give his best energies in striving to attain, viz., a department of Government, with a constituted Parliamentary head, having the duty, "in the widest sense, of caring for the physical necessities of human life." Many of the passages in this essay are striking and we are tempted to quote the following as illustrating Simon's wide conception of the relation of Government to medical affairs :—

> The legislature recognises no medical authority. Occasionally this fact stands out in painful conspicuousness and brings most injurious results. In contested cases requiring scientific testimony—before Parliamentary committees, for instance, and in a variety of legal proceedings—instead of the court having satisfactory power of referring particular questions to skilled impartial adjudicators, the uniform practice is that scientific men are retained on opposite sides to support partisan interests. The advantages, such as they are, which belong to this system might, I believe, as easily be obtained under altered arrangements: the disadvantages are glaring. It might be invidious to refer to illustrations of their reality, but it is, of course, impossible to doubt of the working of this system, that in so far as it makes each witness feel himself engaged to maintain the views of his employer it tends towards a moral prostitution and subornation of science.

In 1853 Simon was appointed one of the commissioners to inquire into the tremendous outbreak of cholera at Newcastle and Gateshead. In 1854 the General Board of Health obtained power to appoint a medical officer and Simon was offered and accepted the appointment, which four years later, on the dissolution of the General Board of Health in circumstances to which we have already alluded, became that of medical officer to the Privy Council. During these four years little could be done towards inaugurating a public health policy for the country. The Board of Health, established in 1848 at Chadwick's instance and working on Chadwick's lines and without medical advice, had been too precipitate. When Simon was appointed the work of that Board had lately been fiercely criticised in Parliament and supported only half-heartedly by the Government. The post of medical officer for a time was merely renewed from year to year after Parliamentary discussion; it was made permanent in 1858 when the functions of the Board were transferred to the Privy Council and then only by a narrow majority of six votes after a debate in which Simon's services and work were warmly defended by Mr. Lowe (the late Lord Sherbrooke). During this period of uncertainty Simon had already shown what valuable work could be done by a central medical department. In 1856 he submitted a report reviewing all the inquiries which had been made for the Board of Health into the London cholera outbreaks of 1848-49 and 1853-54, demonstrating conclusively the relation of these epidemics to polluted water-supply and setting out the well-known contrast in cholera incidence afforded in 1854 between the areas supplied by the Southwark and Vauxhall Company and those supplied by the Lambeth Company which originally had been brought out by Dr. Snow's researches. In 1857 he issued the well-known "Papers on the History and Practice of Vaccination," a quarto volume summarising the knowledge and opinions with regard to vaccination at that time, together with a report in which Simon addressed himself to the following questions: (*a*) What kind of evil was small-pox before vaccination arose to resist it? (*b*) What facts and arguments led to the first sanction of vaccination and to what sort of inquiry were they subjected? (*c*) What further knowledge, at the end of half a century's experience, has been gathered as to the

protective powers of vaccination? (*d*) What evils have been shown to attend its practice or to counterbalance its alleged advantages? (*e*) How far are there realised in this country those benefits which can reasonably be expected from the general use of vaccination? In 1858 followed the "Report on the Sanitary State of the People of England," an essay in introduction to Dr. Greenhow's work on the prevalence of diseases in different districts of England and Wales, which, for the first time, demonstrated many of the wide variations which exist in the local incidence of certain diseases, and strongly emphasised the need for impartial skilled inquiry and publication of facts in all such cases. All this made the arguments for the establishment of a medical department of the Government overwhelmingly strong and in 1859, after the functions of the General Board of Health had become absorbed by the Privy Council, John Simon was permanently appointed medical officer to the Privy Council.

The jurisdiction of the Privy Council in sanitary matters was limited. The Council had certain statutory duties with regard to public vaccination, epidemic regulations, quarantine and the Medical Acts, as well as a general power of inquiry into "any matters concerning the public health in any place or places." Here, as in his City appointment, the degree of importance and usefulness of medical officership depended on what the medical officer made it. Simon, needless to say, saw his opportunities and used them to the full. He got together a brilliant staff of workers—it is sufficient to mention the names of Seaton, Ballard, Burdon Sanderson, Bristowe, Buchanan, Thorne Thorne, and Power, all of whom at one time or another worked under his direction—and organised a thoroughly efficient inspectorate. The position of public vaccinator was then very unsatisfactory; the system, as administered by the Poor-law Board, without medical advice, had failed to secure efficiency or even method, and a large part of the work of the new department was devoted to obtaining information on which reforms had to be based and which led ultimately to the Vaccination Act of 1867. Vaccination supervision, indeed, throughout formed a large part of the work of the department, partly because Simon was strongly impressed with the necessity of inspection to secure the efficient performance of public vaccination, and partly also because he saw the advantages of utilising and developing in various directions a system which carried his inspectors to all parts of the country. Comprehensive inquiries were also undertaken into the incidence of particular diseases on localities and the circumstances of their spread. These inquiries, together with Simon's summaries of their results, appear in the well-known series of Privy Council reports from 1859 to 1872. They included many classical investigations—for example, those into diphtheria, the diseases of the cotton famine, cerebro-spinal meningitis, and cholera. Systematic investigations were also undertaken into habitually prevalent diseases—epidemic diarrhœa, pulmonary diseases, phthisis, causes of infant mortality, and the like. In 1862–63 an important inquiry was undertaken into establishments where dangerous industries (in connexion with lead, mercury, phosphorus, and arsenic poisoning) were carried on. In 1863 also a survey was made of the hospitals of the United Kingdom, having for its object inquiry into the accommodation afforded by each of them for the treatment of different diseases and into their respective sanitary conditions. In the same year inquiries were made with regard to accidental and criminal poisoning, and in 1864–65 was issued the result of a laborious inquiry into the dwellings of the poorer labouring classes in town and country. Other work undertaken was the adaptation of the then existing system of registrar-general's returns and statistics to sanitary requirements, with the result of initiating the present valuable series of decennial supplements issued by the General Register Office. A few other important matters may be mentioned in this necessarily brief summary of the best period of Simon's enormous labours: the organisation which he established to deal with cholera in the epidemics of 1865–66 and with small-pox during the great epidemic of 1871; the initiation in 1870 of a scheme for laboratory work in connexion with public health matters; and the dealings of the department with questions of quarantine. In his uncompromising opposition to the objectionable and useless practice of quarantine Simon did a great service to this country; he laid down principles of dealing with imported infectious disease which still govern our practice and which now are slowly being accepted by foreign nations. The present system of port sanitary authorities and port inspection had its origin in the organisation which Simon began to promote in 1871.

During the period of Simon's tenure of office under the Privy Council he was largely instrumental in obtaining the enactment of the Sanitary Act of 1866, the Pharmacy Act of 1868, and other legislative measures. With increase of sanitary legislation, actual and prospective, it became evident that the establishment of local sanitary authorities on a wider scale, together with the exercise of a large measure of central control and direction over the proceedings of such authorities, had become necessary to satisfactory progress. The chaos of local government at that time is well known and no one has described its difficulties and drawbacks so well as Simon. The Government in 1868 appointed a Royal Commission to inquire into the operation of various sanitary laws and their administration, including the constitution of the administrative authorities, central and local, and the formation of local sanitary areas. The report of the Commission in 1871 was to the effect that "the administration of the laws relating to public health and the relief of the poor should be presided over by one Minister ..... an arrangement which would probably render necessary the appointment under him of permanent secretaries to represent both departments." Simon viewed this report with some misgiving. The proposal to unite his department with the Poor-law Board might or might not be advantageous for sanitary progress; all would depend upon the Minister who controlled and arranged the early organisation of the new department. But the Commission had excluded from its reference much of the best work which the medical department of the Privy Council had been doing—work which was essentially national and had little or no concern with local government. There were, for example, all the questions relating to industrial diseases and the regulation of unwholesome conditions of employment, and numerous matters concerning the administration of the Medical and Pharmacy Acts. In Simon's view it was essential that these and other large questions of medical policy should be dealt with by a department which would fulfil the proper duties of a Ministry of Health, and it was a serious objection to the proposed Local Government Board that it afforded so little promise of developing into an efficient health department of the Government. The Local Government Act of 1871, creating the Local Government Board, gave him little encouragement. The recommendations of the Commission were further narrowed in the Act. Even then, if a satisfactory policy had been inaugurated when the new department began its labours the initial blunders might have been rectified. But Simon's worst fears were realised. The new Local Government Board, under the direction of its first president, Mr. Stansfeld, lost a great opportunity. It became practically the old Poor-law Board under a new name, continuing all the unsatisfactory traditions of petty interference and over-centralisation which characterised that bureau, while the medical department was placed in a position wholly subordinate to the Poor-law secretariate. Simon had then to witness the mischief done by the Poor-law staff in dealing, without his advice, with the formation of districts for medical officers of health, with the system of grants and repayments to sanitary officers, with appointments of joint districts—a colossal series of blunders from which the public and the whole sanitary service are still suffering. Medical investigations were cut down and restricted in all kinds of ways, and the work which Simon could have effected so ably by means of his staff was handed over to Poor-law inspectors, without knowledge either of public health or of sanitary administration. The position became more and more untenable and to Simon, with his great record of hitherto continuous progress, it became intolerably bitter. The policy to which Mr. Stansfeld had lent himself had become practically fixed in 1874 and when a change of Ministry occurred in that year little improvement was to be looked for. Simon retired disheartened in 1876. Writing in later years in "English Sanitary Institutions" he gives a vivid picture of the opportunities of the time and of the way in which they were lost. "Though many years have intervened I do not refrain from saying how grievously wrong I believe to have been the policy of the system represented. In relation to the flag under which I had had the honour of serving I regard it as having been virtually a policy of retreat."

It is probable that the Local Government Board is now in many ways less open to reproach for neglect

of the medical side of its work than in the days when Simon left its service. It is at any rate certain that the medical officer of the Board and his staff now have duties and responsibilities which are far wider and more numerous than they were 28 years ago. But it is notorious that the brilliant scientific and administrative work which has been done by Simon's successors has been achieved in face of a host of inter-departmental difficulties created by the objectionable system against which Simon protested and which it is to be feared still largely prevails. Considering subsequent events in the light of Simon's essays and protests it is impossible not to realise how much higher would be the present position of the whole sanitary service, and how much greater and more general would have been the improvements effected in the whole sanitary condition of the country, if Simon's wider and statesmanlike conception of a Ministry of Health had been adopted. We believe that the formation of such a ministry is not only still desirable but that from many circumstances it is still more imperatively called for than it was in Simon's day. We may quote the following passage from his earlier writings regarding the formation of a Ministry of Public Health:—

> I would beg any educated person to consider what are the conditions in which alone animal life can thrive; to learn by personal inspection how far these conditions are realised for the masses of our population; and to form for himself a conscientious judgment as to the need for great if even revolutionary reform. Let any such person devote an hour to visiting some very poor neighbourhood in the metropolis or in almost any of our large towns. Let him breathe its air, taste its water, eat its bread. Let him think of human life struggling thus for years. Let him fancy what it would be himself to live there in that beastly degradation of stink, fed with such bread, drinking such water. ..... Let him talk to the inmates; let him hear what is thought of the bone-boiler next door, or the slaughter-house behind; what of the sewer grating before the door; what of the Irish basket-makers upstairs—12 in a room—who came in after the hopper and got fever; what of the artisan's dead body stretched on the widow's one bed beside her living children. ..... The fact is, as I have said, that except against wilful violence life is practically very little cared for by the law. Fragments of legislation there are indeed in all directions; enough to establish precedent, enough to testify some half-conscious possession of a principle, but for usefulness nothing beyond this.

So far as these lurid conditions do not any longer exist the fact is a testimony to the work of Simon and his coadjutors, but the very circumstance that so much has been done with faulty organisation should encourage the Government to have more confidence in its trained sanitarians and to face boldly the question of a properly organised and subsidised Public Health Department.

Such was the versatility of Sir John Simon, at so many points did he touch the intellectual life of his time, that it would be misleading if we considered him merely from the sides of scientific or of official achievement. Simon was, indeed, much more than a great officer of health and writer on preventive medicine, hygiene, and surgery. He belonged to the highest type of the man of culture and progress in the middle of the last century. When we think of Buckle, of George Henry Lewes, of Claude Bernard, of Charles Kingsley, and of Ernest Renan, we must perforce think also of Simon who was their friend. He was a social force in quarters where science seldom shows her face—among distinguished circles, both literary and artistic, political and social, where the man of science is only too apt to be regarded merely as the enemy of aesthetics or the chiller of enthusiasms. John Ruskin was Simon's intimate friend and Simon appeared as an executor in his first will. Simon was also intimate with the whole pre-Raphaelite circle and it was united in its affection for the little officer of health, so small in stature but great in intellectual dignity, in lofty intelligence, and moral worth.

In his old-fashioned house in Kensington-square gatherings used to take place for many years, from 1867 onwards, of men who had the real right to be considered celebrities. Leaving on one side the brilliant men of science and the pioneers of Simon's own especial work, many most distinguished French, German, and American thinkers and writers, we may mention Thackeray, Kingsley, Tennyson, Rossetti, Burne-Jones, Jowett, Woolner, who all and often assembled in what they felt to be a congenial atmosphere of liberality and learning. And Simon loved to be surrounded by such friends. He was devoted to the grand style in art and in letters and in later years, as he sat patiently on his sofa battling hour by hour with the pains of venerable age, he would brighten up in an extraordinary way at some chance mention of a favourite author, some painter he had once known, some thinker he had once argued with. A partial loss of eyesight had plunged him, as he said, "in a great darkness" and he must have had many long meditative vigils, but he ended his days among troops of truly devoted relatives and friends, the circle of the latter having been ever recruited. Those who enjoyed the privilege of being included in his list will always think with deep affection and reverence of the great sanitarian who dressed and shaved after a bygone fashion, sat in the familiar room, and awaited the end among the ghosts of the great men of a great century, himself a pathetic and noble shadow soon to join them. That end came last Saturday, July 23rd, after a short period of unconsciousness.

A collected series of Simon's reports, edited by Dr. E. C. Seaton and published in 1887 by the Sanitary Institute, should be read by all sanitarians. "English Sanitary Institutions" was first published in 1890, and a later edition, with various additions, in 1897. Soon after his retirement, in 1878, Simon was elected President of the Royal College of Surgeons of England. He had previously been a member of the Council (1868–1880) and Vice-President. During his tenure of office under the Privy Council he had taken a deep interest in all questions relating to the organisation and status of the medical profession and had been concerned officially in securing the Medical Act of 1858 and in promoting the Medical Acts Amendment Bill which fell through in 1870. Some of his well-known essays on the position of the medical profession were reprinted in the public health reports above referred to. After his retirement Simon accepted a nomination as Crown member of the General Medical Council, on which he continued to serve till 1895. At the time of his death Simon had been longer on the roll of the Royal Society than any other Fellow. He was a Vice-President of that society from 1879 to 1880. He received numerous honorary degrees from universities at home and abroad. The recognition which he received from the Government on his retirement was merely the decoration of C.B.; he was made K.C.B. on the occasion of the Jubilee of 1887.

CHARLES KELLY, M.D., F.R.C.P. LOND.

Dr. Charles Kelly, medical officer of health of a large portion of Western Sussex, died after a very short illness on June 16th at his residence in Gratwicke-road, Worthing. The deceased, who was 59 years of age, appeared to be in his usual health on June 14th and attended a meeting of the sanitary, baths, and burial committee of the town council held at the municipal offices, Worthing. On June 15th, however, he was seized with illness which terminated fatally on the evening of the following day. Dr. Kelly's medical education was received at King's College, London. In 1866 he graduated as M.B. at the University of London, obtaining a university scholarship in medicine and midwifery; in the following year, when he took the degree of M.D., he had the distinction of being gold medallist. In 1866 he was also admitted M.R.C.S. Eng. and in 1880 he was elected a Fellow of the Royal College of Physicians of London. At King's College Hospital he held the appointments of house physician and resident accoucheur; he was also a Fellow of King's College where for some time he was professor of hygiene and curator of the museum. In March, 1874, he was appointed medical officer of health of the combined district of West Sussex, including the urban authorities of Arundel, Horsham, Littlehampton, Portslade, Southwick, and Worthing and the rural district authorities of East Preston, Horsham, Midhurst, Petworth, Steyning (East and West), Thakeham, and Westborne. The area of the district is, of course, very extensive and the population, which at the time of Dr. Kelly's appointment in 1874 was about 96,000, had risen in the census year of 1901 to 122,604. For a few years he resided in Horsham, but eventually he removed to Worthing. Dr. Kelly was a man of many attainments and possessed considerable literary ability. He was the author of a number of reports on the general health conditions of his district as well as on outbreaks of enteric fever in Worthing; one of these, which occurred in 1893, was the subject of a great many references in our columns. He was a Fellow of the Royal Meteorological Society and the Worthing meteorological records were compiled under his supervision. The funeral took place at Broadwater Cemetery on June 20th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8565 births and 4142 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been 13·5, 13·5, and 13·7 per 1000 in the three preceding weeks, further rose last week to 14·1 per 1000. In London the death-rate was 14·8 per 1000, while it averaged 13·9 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·1 in West Bromwich, 5·5 in King's Norton, 7·1 in Willesden and in Leyton, 7·4 in Northampton, 8·3 in Hornsey, and 8·6 in Hastings; while the highest rates were 18·2 in Birkenhead, 18·6 in Bootle, 19·3 in Sunderland, 19·6 in Rhondda, 19·7 in Burnley, 20·0 in St. Helens, and 20·3 in Liverpool. The 4142 deaths in these towns last week included 792 which were referred to the principal infectious diseases, against 456, 500, and 506 in the three preceding weeks; of these 792 deaths, 428 resulted from diarrhœa, 177 from measles, 91 from whooping-cough, 50 from diphtheria, 24 from scarlet fever, 17 from "fever" (principally enteric), and five from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Ipswich, West Bromwich, King's Norton, or West Hartlepool; while the highest death-rates from the principal infectious diseases were recorded in Aston Manor, Stockport, Wallasey, Liverpool, Bootle, Wigan, Huddersfield, Leeds, and Rhondda. The greatest proportional mortality from measles occurred in Birkenhead, Bootle, St. Helens, Huddersfield, Bradford, Leeds, and Rhondda; from scarlet fever in Hanley and Warrington; from whooping-cough in Burton-on-Trent and Blackburn; and from diarrhœa in Tottenham, West Ham, Birmingham, Aston Manor, Stockport, Wallasey, Liverpool, and Rhondda. The mortality from diphtheria and that from "fever" showed no marked excess in any of the large towns. Of the five fatal cases of small-pox registered in these towns last week, two belonged to Newcastle-upon-Tyne and one each to London, Rochdale, and Gateshead. The number of small-pox patients in the Metropolitan Asylums Hospitals at the end of last week was 51, against 74, 71, and 62 at the end of the three preceding weeks; six new cases were admitted during the week, against ten, ten, and seven in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1631, 1685, and 1698 on the three preceding Saturdays, had further risen to 1754 on Saturday last, July 23rd; 234 new cases were admitted during the week, against 254, 269, and 229 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 146, 135, and 155 in the three preceding weeks, declined again last week to 120, and were 13 below the number in the corresponding period of last year. The causes of 39, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Leeds, and in 46 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Warrington, Manchester, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·3, 15·8, and 14·8 per 1000 in the three preceding weeks, rose again to 15·7 per 1000 during the week ending July 23rd, and was 1·6 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 11·0 in Leith and 12·3 in Perth to 18·7 in Greenock and 21·1 in Paisley. The 518 deaths in these towns included 23 which were referred to diarrhœa, 22 to whooping-cough, 12 to measles, three to scarlet fever, three to diphtheria, three to "fever," and two to small-pox. In all, 68 deaths resulted from these principal infectious diseases last week, against 75, 64, and 53 in the three preceding weeks. These 68 deaths were equal to an annual rate of 2·1 per 1000, which was 0·6 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 18, 20, and 19 in the three preceding weeks, rose again last week to 23, of which ten occurred in Glasgow, four in Edinburgh, four in Dundee, and three in Aberdeen. The deaths from whooping-cough, which had been 31, 24, and 21 in the three preceding weeks, rose again to 22 last week and included 13 in Glasgow, three in Paisley, two in Edinburgh, two in Dundee, and two in Aberdeen. The fatal cases of measles, which had been six in each of the two preceding weeks, increased last week to 12, of which six were registered in Edinburgh, three in Greenock, and two in Glasgow. The deaths from scarlet fever, which had been two in each of the two preceding weeks, increased last week to three, and all occurred in Glasgow. The fatal cases of "fever," which had been three, seven, and three in the three preceding weeks, were again three last week, and were all recorded in Glasgow, where the two deaths from small-pox also were registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 80, 88, and 49 in the three preceding weeks, rose again last week to 75, but were slightly below the number in the corresponding period of last year. The causes of 26, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 16·5, 17·9, and 19·3 per 1000 in the three preceding weeks, declined again to 17·5 per 1000 during the week ending July 23rd. During the past four weeks the death-rate has averaged 17·8 per 1000, the rates during the same period being 13·4 in London and 15·4 in Edinburgh. The 127 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 13 from the number in the preceding week and included 15 which were referred to the principal infectious diseases, against seven, ten, and 18 in the three preceding weeks; of these, five resulted from measles, five from diarrhœa, three from whooping-cough, and two from "fever," but not any from small-pox, from scarlet fever, or from diphtheria. These 15 deaths were equal to an annual rate of 2·1 per 1000, the death-rates last week from the principal infectious diseases being 2·9 in London and 2·0 in Edinburgh. The fatal cases of measles, which had been two, two, and ten in the three preceding weeks, declined again last week to five. The deaths from diarrhœa, which had been one, five, and two in the three preceding weeks, rose again to five last week. The fatal cases of whooping-cough, which had been three in each of the two preceding weeks, were again three last week. The two deaths from "fever" corresponded with the number in the preceding week. The 127 deaths in Dublin last week included 24 among children under one year of age and 30 among persons aged 60 years and upwards; the deaths of infants showed a very considerable decline, while those of elderly persons were but slightly fewer than the number in the preceding week. Five inquest cases and three deaths from violence were registered; and 52, or more than two-fifths, of the deaths occurred in public institutions. The causes of seven, or nearly 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: W. H. Daw to the *Wildfire*; T. H. Vickers to the *Wildfire* for the *Immortalité*; and H. C. Ross to the *Wye*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel F. B. Maclean proceeds to the Royal Herbert Hospital for duty. Lieutenant N. E. Dunkerton proceeds to London shortly to undergo a course of instruction.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Hudson to be Surgeon-Major (dated July 16th, 1904); Surgeon-Lieutenant H. Stallard, 4th Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment), to be Surgeon-Lieutenant (dated July 27th, 1904).

IMPERIAL YEOMANRY.

Lancashire Hussars: John Tawse Nisbet to be extra-

Surgeon-Lieutenant under paragraph 30 Yeomanry Regulations (dated July 23rd, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cornwall (Duke of Cornwall's): Surgeon-Captain J. Ratcliff-Gaylard resigns his commission and is appointed Captain (dated July 23rd, 1904).

Rifle: 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Captain A. M. Hickley resigns his commission (dated July 23rd, 1904). 1st Cadet Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant A. R. Owst to be Surgeon-Captain (dated July 23rd, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Maurice Waugh Renton to be Lieutenant (dated July 23rd, 1904).

THE WAR IN THE FAR EAST.

Public interest is, and for the past week has been, focussed on questions and complications connected with the action of Russia in the seizure of British vessels, and it is needless to say that the House of Commons listened with very grave attention to Mr. Balfour's statement thereon on July 25th when, despite the reassuring measures and action promised by the Russian Government, the situation was, and still remains, we regret to say, one of great gravity. As regards the progress of the war it seems to be clear that there has been a great deal of severe fighting with results that have been highly favourable to the Japanese. General Kuropatkin's forces have given way and been slowly driven to the northward, while material gains have been secured by their opponents. As we suggested last week would be the case, there seems to have been a big fight near Tashichiao, which has been captured and occupied by the Japanese, and the Russians have definitely evacuated Newchwang, setting fire to the railway station and destroying their stores before leaving. But the reports from the seat of war are somewhat conflicting and very meagre owing probably to the belligerent generals of both sides being too much occupied in field operations to frame and to forward military despatches. The Russians have been, and still must be, encountering a growing difficulty in the transport of ammunition and food-supplies along the Siberian railway and in working at the same time their system of troop-trains for reinforcing their army in the field. The condition of the Russian camp at Mukden is described as deplorable, there being a great lack of food-supplies. The decisive battle with General Kuropatkin's army which seems imminent has, however, still to take place. The envelopment with which that army is menaced must by this time be nearly, if not quite, complete. As regards Port Arthur, there is much in the nature of prophecy but little or nothing to record in the way of trustworthy news. The Japanese navy has throughout laboured under one difficulty: it has not been of sufficient strength—that is, it has not had a sufficient number of ships to maintain an effective blockade of both Port Arthur and Vladivostock and to secure at the same time the safety of their marine transport system from attack. It is, nevertheless, wonderful what their naval service has been able to accomplish in this war. With regard to the medical and sanitary aspects of the campaign, with which we are, of course, more especially concerned, there is a singular dearth of news. The recent losses on both sides have been severe and the transport by rail of over 300 Russian wounded, of which mention has been lately made, must be but a fractional part of the sick and wounded in General Kuropatkin's war hospitals; indeed, considerations about provision for them may have seriously embarrassed his tactics and freedom of movement. From about the middle of July to the middle of September the roads are, owing to the rains, impassable for wheeled vehicles and movement is confined to the passage of light carts and pack animals so that the sick transport must be a great difficulty to both sides. Completely isolated as Port Arthur is on the land side there must by this time be a large accumulation of sick and wounded in the hospitals of that fortress.

The *Novosti* relates that at a recent meeting of the Caucasian Medical Society Adjutant-General A. N. Kuropatkin, commander of the forces in Manchuria, was elected an honorary member for his constant exertions as to sanitation on behalf of the department under his care and his constantly sympathetic attitude to the medical men under his orders and his efforts to improve their position both as to the execution of their duties and their incomes.

Correspondence.

"Audi alteram partem."

THE INSURANCE OF MEDICAL MEN AGAINST THE DANGERS OF THEIR PROFESSION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 25th, p. 1811, you give a reasonably full account of the case of Eyre *v.* Scottish Accident, Life, and Fidelity Insurance Company, but with such an editorial bias as to obscure the true facts, and as the one mainly responsible for the defence I should like, by your courtesy, to address a word to the profession. An insurance company is a business concern and not a charity and has to be conducted on business lines, and this particular case was not contested for £ *s. d.* but on principle. You make it clear more than once in the course of your article that the company's agent had misled Dr. J. Eyre. Now the first question that was asked at the arbitration was whether the agent had misrepresented things to Dr. Eyre. Both Dr. Eyre's counsel and himself distinctly said "No." Is it fair and honest that this question should be again raised? Yet I find the same false statement in Dr. J. H. Bryant's letter of July 9th. Before opposing this claim I took the opinion of several of the most eminent members of the profession in London who thought Dr. Eyre's contention ridiculous, as the result proved.

With the exception of Dr. Eyre's first letter stating he had contracted Malta fever without any mention of accident (and he failed to find a satisfactory accident after the most careful cogitation) your report of June 25th is complete enough for any medical man to judge of the merits of the case. The case in a nutshell is this: Dr. Eyre contracted Malta fever (a specific fever) and he wa insured against certain diseases, but Malta fever was not one of them and he claimed under the heading "septicæmia." On a parity of reasoning typhoid fever, pneumonia, and most other diseases are "septicæmia." I put it to the profession was the arbitrator's finding not right? I am very sorry for Dr. Eyre, whether his claim was founded on carelessness or conceit the result was sad for him. I am sorry for the eminent men who gave all too sympathetic evidence on his behalf, and also sorry for our profession because it only gives our legal friends another opportunity of regarding expert medical evidence in the superlative degree. I am, Sirs, yours faithfully,

JOHN MACGREGOR.

Duke-street, W., July 26th, 1904.

NOTES ON THE PHYSIOLOGICAL ACTION OF "CARBONATED" BRINE BATHS.

To the Editors of THE LANCET.

SIRS,—Since the publication of Professor T. Schott's paper in 1891 so much has been claimed for the Nauheim treatment of heart disease that it has aroused in many minds the natural suspicion which is the fate sooner or later of all reputed panaceas.

Without attempting to discuss any of the controversial points which have arisen in connexion with the treatment, the following notes of experiments made with the brine at the Saltburn baths may be of interest. The analysis of this brine is as follows:—

Sodium chloride	25·365 per cent.
Sodium sulphate	0·066 ,,
Calcium sulphate	0·402 ,,
Magnesium sulphate	0·048 ,,
Calcium carbonate	0·029 ,,
Water	74·090 ,,

This percentage of sodium chloride works out at 2400 grains to the pint, very little below the Droitwich water which contains 2700 grains to the pint. The stronger waters, however, do not concern the present paper, all the notes referring to experiments made with water approximating in strength to the Grosser Sprudel at Nauheim. This averages 190 grains to the pint, or rather less than 2 per cent., and no baths have been used here in connexion with these experiments containing more than 5 per cent. of salt.

Brine baths generally may be divided into three classes:

namely, (1) weak, (2) strong, and (3) very strong, containing respectively from 2 to 5 per cent., from 5 to 12 per cent., and from 12 to 25 per cent. of salt. In a future paper I hope to publish the results of experiments now being made with Classes 2 and 3, plain and carbonated, but as I have mentioned already only Class 1 concerns us now. The technique which has been adopted follows the lines laid down by Dr. L. C. T. Thorne,[1] though the first bath is given at a temperature of 96° F., patients objecting to the lower temperatures at first. Later the baths are given at 90° and even 88° but not as a rule below this point.

The carbonic acid gas is obtained from Dr. Sandow's "patent carbonated baths," the number of packets dissolved in each bath being gradually increased. Four ounces of calcium chloride are dissolved in the first bath and this amount is increased by one ounce in each successive bath until the limit of 12 ounces is reached. Baths are given on three successive days, the patient resting on the fourth day.

The question whether the chemical constituents of the baths are capable of absorption by the intact skin has been the object of study for many years and has been answered in the negative by the majority of observers. On the other hand, many continental observers—notably Professor H. Keller[2]—have shown that the skin through imbibition can and does take up certain constituents of the baths; these penetrate as far as the corium[3] and are then taken up by the lymph and blood through osmosis. The quantity thus absorbed must be in any case excessively small and the explanation of the physiological changes that occur must be looked for in the reflex action of a stronger lymph and blood stream.

The physiological changes recognised as following the brine treatment are given by Professor Keller[4] thus: 1. The sense of touch and the sensibility of the skin are both increased. 2. The osmotic pressure is raised. 3. The red blood corpuscles are slightly increased in number whilst the white are lessened. 4. Respiration is slowed and deepened. 5. The intake of oxygen and the output of carbonic acid are increased. 6. The pulse is slowed and the blood pressure is raised. 7. The baths have a distinct influence on metabolic change according to their concentration and chemical constitution, but here all observers are not agreed: in Class 1 (containing from 2 to 5 per cent. of salt) we find: (*a*) increase of urine; and (*b*) increase of chlorides, urea, and uric acid.

I find that in the few cases which I have had the opportunity of studying, these results, which refer only to plain brine baths, are rendered more striking by the addition of carbonic acid gas to the water. The effects are of course most obvious in the circulatory and respiratory systems. Diminution of the cardiac dulness occurs to a considerable extent, but the claim that this change is due to an actual shrinkage of the volume of the organ is difficult to understand; probably the alternative explanation of an increased pulmonary expansion, and the consequent interposition of resonant lung between the heart and the chest wall, is the correct one. The pulse frequency is lessened and the blood pressure is as a rule raised, although occasionally a lowering of the pressure is noticed. According to Dr. Franze,[5] low blood pressures are raised and high ones are lowered but I have not been able to confirm this statement. The heart's action becomes slower, stronger, and more regular and in some cases œdema and cyanosis disappear in a most remarkable manner.

To the patient the subjective effects are often most grateful—sleep is better, the appetite increases, and there is a sense of improved well-being and heightened tone generally.

The greatest care should be taken in the selection of cases suitable for the treatment. In the paper[6] referred to above it is claimed that valvular lesions, simple muscular weakness due to influenza, enteric fever and acute rheumatism, fatty heart, arterio-sclerosis, and angina pectoris may all be benefited by a graduated course of baths.

I believe that what may perhaps be called the indiscreet administration of different baths in the hope that one form or other will hit the mark has a tendency to bring the whole science of balneology into discredit and is at least certain to cause frequent disappointments—if nothing worse.

These baths are undoubtedly a most powerful remedial agent and the selection of suitable cases, the consideration of individual idiosyncrasy, and more especially the careful graduation of the treatment are of the highest importance.

As Professor Keller says, clinical experience and careful experimental study must go hand in hand in the elucidation of the physiological and therapeutical effects of the baths; empirical balneology must be done away with before the science can take its place by the side of pharmacology.

I am, Sirs, yours faithfully,

R. ALLAN-BENNETT, M.B. Lond.

Saltburn-by-the-Sea, July 21st, 1904.

[1] THE LANCET, March 21st, 1903, p. 795.
[2] Das Soolbad, Rheinfelden, 1892.
[3] Die Physiologische Wirkung des Soolbades, &c., Therapeutische Monatshefte, October, 1903.
[4] Loc. cit.
[5] THE LANCET, July 16th, 1904, p. 140.
[6] Franze: Loc. cit.

THE TREATMENT OF HÆMORRHOIDS AND ALLIED CONDITIONS BY OSCILLATORY CURRENTS OF HIGH TENSION.

To the Editors of THE LANCET.

SIRS,—I crave your courtesy for the insertion of a brief reply to the criticisms on my paper made by Mr. P. L. Mummery in THE LANCET of July 16th, p. 175. As I shall shortly be presenting a further communication on the same subject I will now confine myself strictly to the points raised in Mr. Mummery's letter.

1. I am, of course, perfectly well aware that in many cases hæmorrhoids of minor degree can be cured by slight stretching of the sphincter muscles by the occasional passage of bougies. This question of mechanical stretching, however, does not enter into the technique of Doumer's method as I have conceived it. The diameter of my electrodes is, in the first place, too small to produce mechanical stretching, and, in the second place, as I ought, perhaps, to have stated in my original communication, it is quite unnecessary to employ any force in introducing an electrode. One of the most striking early effects of the current is the disappearance of any existing spasm, so that after a minute or two a suitable electrode will slide through the sphincters almost by its own weight.

2. Mr. Mummery claims better results than mine for the routine treatment as applied at St. Mark's Hospital to acute or recent cases. I do not know what his figures actually are but I have apparently been too modest in my claims. Of the 25 acute or recent cases quoted, 14 were anatomically cured, nine others might be described as clinically cured—as they are still practically free from any local discomfort—and of the remaining two cases I may say that the abandonment of treatment was not due to any doubt as to its success.

3. I can assure Mr. Mummery that there is not any risk of the causation of either electrical or x-ray burns at the hands of anyone qualified to employ high-tension currents in medical work; neither can I see that I have made any such admission. Electricity, like any other branch of medicine or surgery, requires experience and it is not fair to judge of the risks attending its use by beginners.

4. As regards the treatment of fissure my experience shows me that the introduction of an electrode made of glass or polished metal causes far less pain than that accompanying a digital examination. In the first place, the current has a decided anæsthetic action when properly applied, and, in the second place, there is no necessity in such cases to employ a large electrode. The diameter which I most usually use varies between about three and 15 millimetres.

I am still of opinion that, both for the good local results obtained and also for the incidental beneficial effect on a patient's general condition, the method of treatment as described by me gives results superior to any other non-operative method with which I am acquainted.

I am, Sirs, yours faithfully,

Devonshire-street, W., July 19th, 1904. T. J. BOKENHAM.

KADER'S OPERATION OF GASTROSTOMY.

To the Editors of THE LANCET.

SIRS,—I am glad to be able to add another case of this operation to the four recorded by Dr. J. C. Renton in THE LANCET of July 16th, p. 144. I performed this operation for stricture of the œsophagus in the Lincoln County Hospital on June 8th and the result has been most

satisfactory. There is not the slightest regurgitation and the patient is able to pass a soft tube and to feed himself with great ease. The operation is simple, quickly done, and appears to answer its purpose excellently.

I am, Sirs, yours faithfully,

WM. HY. B. BROOK, F.R.C.S. Eng., M.D. Lond.,
Surgeon to the Lincoln County Hospital.

Lincoln, July 22nd, 1904.

THE USE OF PHENYLHYDRAZIN IN THE CLINICAL EXAMINATION OF URINE.

To the Editors of THE LANCET.

SIRS,—In a communication under the above heading, published in THE LANCET of July 23rd, p. 211, Dr. W. H. Willcox details certain experiments he has carried out with a modification of a portion of a method I have employed as an aid to diagnosis. To enter into a detailed criticism of his conclusions, and the experimental evidence on which they are based, is not feasible in the space afforded by a letter. I shall therefore reserve my remarks for a paper in which I hope to clear up certain misapprehensions that appear to exist and to give further details of my work. I would, however, point out that Dr. Willcox's experiments, and consequently the results he has obtained, differ materially from mine, and also that I am not aware that anyone competent to express an opinion has stated that "the production of characteristic yellow crystals in a urine after hydrolysis with hydrochloric acid" is a "specific test for any special pathological condition."

I am, Sirs, yours faithfully,

Beaumont-street, W., July 25th, 1904. P. J. CAMMIDGE.

ONE FORM OF SUPPURATIVE APPENDICITIS.

To the Editors of THE LANCET.

SIRS,—The paper by Mr. A. C. Roper in THE LANCET of July 23rd, p. 212, on One Form of Suppurative Appendicitis, is of great interest and raises points of considerable practical importance. That it is possible for caseous tuberculous mesenteric glands to set up symptoms simulating appendicitis I have no doubt. During the last few months I have made necropsies on two cases in which this occurred. One was in a young man, aged 20 years, who was apparently in good health until a few months before his death, when he had an attack of pain in the right iliac fossa with sickness and distension. It subsided in a few days and he went on well until a second attack with marked swelling in the right flank. An operation was performed but the patient died from general peritonitis. At the necropsy the abdominal mesenteric glands were found to be enlarged and caseous, especially about the cæcum. No other tuberculous lesion was discovered. The second case was in a little girl, aged three years. She had no previous illness to call attention to her condition until the symptoms which were diagnosed as "appendicitis." An operation was performed and an abscess was found in the right iliac region. She also died from general peritonitis and at the necropsy a mass of enlarged caseous mesenteric glands was found in the neighbourhood of the cæcum, one of these being merely a bag of calcareous débris. There was no evidence of tuberculosis in any other organ.

That these two cases were both tuberculous is fairly certain and from what I infer from reading the account of Mr. Roper's three cases it seems likely that they were of similar origin, especially as two of them occurred in young children. I am, Sirs, yours faithfully,

University College, Sheffield, July 25th, 1904. ARTHUR HALL.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The New Welsh Waterworks.

THE great engineering undertaking authorised by Act of Parliament in 1892, commenced shortly afterwards, and now practically concluded at a cost of something like £6,000,000 up to date, was set in operation on July 21st, when His Majesty the King visited Rhayader and turned on the tap which admitted the first stream of water to the filter-beds and on the same occasion knighted, to the great satisfaction of all the citizens of Birmingham, the very popular and most efficient Lord Mayor, Mr. Hallewell Rogers. This is not the place to give any account of this huge undertaking but the following figures extracted from the special account published by the *Birmingham Daily Post* will give some idea of the magnitude of the works and of the amount of water which the reservoirs are capable of storing :—

Reservoir.	Capacity.	Water area.	Height of dam.	Top water level.
	Million gallons.	Acres.	Feet.	Feet above O.D.
Caban Coch	7540	497	122	820
Pen-y-Gareg	1330	124	128	945
Craig-Goch	2000	217	120	1040
Dol-y-Mynach ...	1500	148	101	900
Cil Oerwynt	3100	269	109	1095
Pant-y-Beddau ...	1900	244	98	1175

The water is conveyed to Birmingham through an aqueduct 73¼ miles in length and the fall over that distance is only 170 feet, just enough to keep the stream of water steadily flowing. It takes 48 hours over its journey. The brunt of the work in connexion with the business side of these operations has fallen on the shoulders of the chairman of the water committee, Alderman Lawley Parker, and the citizens of Birmingham and of the other districts served by this supply should always feel grateful to this gentleman for the untiring and unselfish manner in which he has devoted nearly the whole of his time, for the past ten years, to the enormous task which has been laid upon him. One can hardly help feeling a twinge of regret that some mark of recognition was not awarded to the man to whom, more than to any other, the success of the undertaking is due.

Hospital Sunday Fund.

A very important change in the method of allocating this fund has just been decided upon. In the past the funds accruing have been given on one year to the General Hospital, on the second to the Queen's Hospital, and on the third to the amalgamated charities—i.e., to the remaining hospitals and institutions of like character in the city. Each institution or group, therefore, "came into benefit," so to speak, once in three years. At the recent annual meeting of the friends and supporters of the fund it was proposed by the Lord Mayor that in future the Hospital Sunday collection should be divided annually amongst all the charities participating, it being understood that the division should be in the same proportion as the present—namely, one-third to the General Hospital, one-third to the Queen's Hospital, and one-third to the amalgamated charities. In seconding the motion, which was ultimately carried unanimously, Alderman Beale said that it must make a stronger appeal to the people of Birmingham to feel that for the whole of the charities without distinction a particular Sunday was set aside as a day of collection, and possibly as a day upon which so many of the public who had not experienced a day's illness during the year might think of those who had not been so fortunate. He was hopeful that if ministers would point out to their congregations the change which had taken place there would be an improvement in the fund which they all knew to their great regret had been practically standing still for the past 40 years. It was time some movement was made. Other funds had grown with the growth of the town ; this for some reason had stood still.

Training of Midwives.

A largely attended meeting of ladies has recently been held to discuss this matter. The Lady Mayoress, who presided, said that it was most important to secure a sufficiency of properly qualified midwives and expressed the hope that the scheme of the Lying-in Charity would be liberally supported. The management committee had purchased a site in Loveday-street for a maternity institution and a fund of £5000 was now wanted for the erection of the building. It was a lamentable fact that 60 per cent. of the births in Great Britain were not attended by medical practitioners and among the poorest classes that figure was increased to 80 per cent. It was of the utmost importance that adequate provision should be made for skilled nursing for the poor married women of the city, especially having regard to the demands of the legislature in

reference to the qualifications of those who undertook this responsible work. Mrs. Wallace Bruce said that under the new Act the registration of midwives was compulsory. She spoke of the pitiful tragedies which were exposed at the coroner's court as a result of the ignorance of midwives and pointed out that the coroner had no power, although the deaths were due to ignorance, to stop these nurses continuing their work. About two-thirds of the blindness of people were due to negligent treatment at birth, while statistics showed that lunacy and disease were due to an appalling extent to the same cause. Miss Gibson, matron of the Birmingham City Infirmary, urged that what was needed in Birmingham was not monthly nurses but midwives. There was at present no place where the midwife, as such, could be trained in the city. A number of subscriptions were announced at the end of the meeting, including one of £500 from a lady who did not wish her name to be made known.

Birmingham and Midland Eye Hospital.

The annual meeting of the friends of this charity has recently been held under the presidency of Viscount Cobham. Both the annual subscriptions, which amounted to £4350 6*s.* 6*d.*, and the donations (£705, including £500 from the Hospital Saturday Fund) showed an increase upon the last year. The total payments, on the other hand, showed a decrease of £219 as compared with the past year, the expenditure having been £7580. The legacies for the year amounted to £2800 as compared with £930 in 1902. The total number of patients treated, exclusive of those on the books at the commencement of the year and of renewals, had been 24,381, the out-patients numbering 23,434. The medical report showed that 682 operations were performed upon in-patients, including 263 for the removal of cataracts of various kinds and of these ten proved unsuccessful. 75 useless or dangerous eyes were removed. This hospital can certainly be congratulated upon its financial position, so different from that of most, if not all, of its sister institutions in the city, since it carried forward a balance of £8237 this year, including a balance from the previous year of £6000. In moving the adoption of the report, Viscount Cobham expressed the fear that many charitable institutions, if deficits continued, might have to come upon the rates, which, in his opinion, would be a very disastrous thing from the point of view of the administration of the institutions and also from the point of view of charity itself. The Eye Hospital does not seem to be in any danger of this fate.

The Blind Institution.

Very different was the tale told at the annual meeting of the supporters of the Blind Institution held on the same day and presided over by the same chairman. The report stated that the number of blind persons directly benefited by the charity during the past year amounted to 634 and exceeded the total of the past year by 19. The education of the blind pupils at the present time presented exceptional difficulties since there was an unusually large percentage of children in the school who suffered from bodily and mental defects as well as from blindness and this necessitated a large amount of individual and special tuition as well as great resourcefulness on the part of the teachers. The Education Act of 1902 gave permissive power to the authorities to pay for the education of the blind after the age of 16 years, the limit beyond which payments could not be made under earlier Acts. A number of authorities had been approached and had consented to pay a portion of the fees for pupils beyond the age mentioned. With regard to the trading department it was pointed out that its primary object was to provide suitable occupation for blind persons, so that they might be enabled to maintain themselves by honest industry. The sale of goods during the year amounted to £8441, as compared with £2486 in 1894. The number of blind workers had increased from 19 in 1894 to 66 in 1904. The wages had risen during the same period from £419 to £2245. Boot mending and stocking knitting had been added to the list of trades taught in the institution. The finances were still in a very unsatisfactory condition. There were a deficit on the general account for the past year of £1256 and an accumulated adverse balance of £477 on the adult blind branch account. The committee had employed every legitimate means to increase the income but the result was not adequate to the need. It was announced that the kindergarten school was approaching completion and would be opened in September. The donations towards this branch of the work amounted on March 31st to £13,493 but a sum of £4000 must still be raised if the school was to be opened, as was desirable, free from debt.

July 26th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary.

AN amended plan of the infirmary is to be submitted to a meeting of the trustees to-morrow. There is no alteration proposed as to the front elevation to Oxford-road. The official and administrative, the teaching and residential portions of the hospital will occupy this front. The Nelson-street frontage, which runs at a right angle to Oxford-street, will be devoted chiefly to the out-patients' department and in it will be the entrance for all patients. There is a back street, Berlin-street, which will be used for all the purposes for which a back entrance is required, while on the fourth side there will be an entrance for hearses into a closed and covered yard. This fronts to York-place and it seems unfortunate that the hearses must come and go on that side. It will not increase the amenities of that locality and it might surely have been arranged for this sad but necessary work to be carried out in Berlin-street. The medical and surgical wards are arranged in two sets of four parallel pavilions with south balconies overlooking the gardens of the hospital. All the pavilions form self-contained units, each medical ward with day and lecture rooms, physicians' rooms, &c. The surgical pavilions have operating theatre, day-rooms, &c., complete. All the pavilions are connected by glass-covered ways so designed as to isolate each in the event of fire, while there is practically no obstruction to the free passage of air "through and around" every block. The pavilions run north and south and each is separated from its neighbour by about double its height. "Each has also its separate garden with access from each floor for patients." To the extreme south-east is the isolation pavilion, while to the south-west is the pathological department with lecture theatre, mortuary, &c. The total accommodation at present provided will be 481 beds, but an addition of 108 is contemplated which will make a total of 589. The buildings will be lighted by electricity and the various lifts will also be worked by it. The heating will be chiefly by hot water under forced circulation, coal fires being used as little as possible. The buildings will be of red brick with Portland stone. The question of a receiving-house in the centre of the town and of an out-patient department there has been a good deal discussed. The committee of the Manchester and Salford Sanitary Association forwarded a resolution a short time since hoping that some provision would be made on or near the present infirmary site for an out-patients' department and for the reception and treatment of emergency cases, and similar resolutions have been sent by the committees of the Manchester and Salford Hospital Sunday and Saturday Fund and of the Red Cross Society. At the board meeting yesterday the chairman, Mr. W. Cobbett, stated that no decision had been arrived at and such decision could only be a recommendation to the trustees and must come before them at a special or annual meeting. As the removal to Stanley-grove would not take place for some four years there was no necessity, he said, for an immediate decision.

Child Mortality at Burnley.

Some of our Lancashire towns stand out in an unhappy and discreditable prominence from their high mortality, especially as regards the children. Among them Burnley at present heads the list with an infantile death-rate of 217 per 1000, the highest of the 67 large towns of England and Wales, the next highest being another Lancashire town, Wigan, with 180. In the third quarter of last year the infantile death-rate of Burnley rose to the grievous proportion of 251 per 1000. This loss of human life goes on year by year without attracting any very deep or widespread attention and with little apparent check from sanitary or philanthropic efforts. If one tries to ascertain the cause many factors are found to be at work. There are the smoky, dirty atmosphere of our manufacturing towns, the still worse air of the close and stuffy rooms in which so many live, the want of the mother's care while she is in the mill, where she goes as soon after her confinement as she is able and before she is fit to work, and the want of the

mother's milk and the substitution of all sorts of unsuitable food by those who have the so-called charge of the child, sour milk from a dirty bottle being one of the least harmful. Much of this preventable suffering and waste of life arises from ignorance which seems as dark as ever among a large proportion of our working women, while its dispersion by our elementary, so-called, education seems as hopeless as ever, though perhaps the recent stirring among the educational dry bones may lead to something better. There is also another cause which plays a more sinister part than we like to admit—i.e., the little value attached to infant life even among those who are reckoned "very decent people." It is illustrated by this little story, for the truth of which I can vouch. Several women were talking over the domestic life of "Mary Anne" and the advent of her last baby as increasing her troubles and cares, for there were seven or eight children already, when one benevolent old woman said, "It would be a blessed good thing if it would please the Lord to take three of the littlest."

Pollution of the Irwell.

At the Bury police-court on July 21st the Radcliffe urban district council was proceeded against for sending liquid sewage into the Irwell. The works are insufficient and three inspectors found on June 3rd at midnight that "seven out of the eight tanks were running off into the river full and the eighth was being filled." This, of course, meant that the day sewage was kept up as much as possible and run into the river at night. The Whitefield urban district council was also summoned for similar offences. Both cases were adjourned for two months to give opportunity for preparing efficient schemes.

The Water-supply.

The recent fine weather has caused large demands on the water-supply. On Tuesday last the consumption is said to have been the highest in the records of the city, the quantity being nearly 42,500,000 gallons. The week before last the daily consumption averaged nearly 39,000,000 gallons, 5,500,000 gallons in excess of that used in the corresponding period of last year. At the end of last week the stock of water should last for 64 days at an estimated daily consumption of 34,000,000 gallons.

Public Baths for Moss Side.

Moss Side, which may be said to be in Manchester, though not of it, having an independent existence, proposes to spend £10,000 on public baths. So far the district has had to depend on those of Manchester, the nearest of which are about one and a half miles away. There are to be a swimming bath 75 feet long by 30 feet wide and 32 slipper baths, 20 of which are to be for men. The period of her isolation will, however, soon be over as in November next the Moss Side district is to become amalgamated with the city. In view of this the plans have been submitted unofficially to the baths committee of the city council. It is to be regretted that no washhouses have been provided on the ground "that the district was not of a character to need them"—i.e., that it was a little above the need of washhouses, if not of baths. There are, however, plenty of poor women in Moss Side to whom a public washhouse would be a boon of great value. It is difficult to understand the apparent reluctance to provide public washhouses in poor districts. They are valuable in more ways than one. It is evident that where the washing and drying of clothes are carried out away from the dwelling or perhaps the room occupied by a family the home will be more comfortable for the husband on return from work than if it were pervaded by steam and the smell of soapsuds and that he will be the less likely to adjourn to the public-house or the "vaults" that are sure not to be far off.

Unhealthy Carriages and Tramcars.

The efficient ventilation of our railway carriages and tramcars has not yet been accomplished and it seems as if the difficulties in the way were so great as to check rather than to stimulate efforts for overcoming them. One difficulty as to railway carriages arises from the morbid susceptibility to draughts and chills (and the consequent aversion to fresh air) of the young men who crowd the trains for the suburbs after the business of the day is over. Nothing is commoner, at all events in the neighbourhood of Manchester, than to see a compartment with both windows closed full of young men. If a passenger should get in as they get out, even a few miles only from town, he will find the air of the carriage too offensive and oppressive to be endured. And on the whole the first-class carriage is the worst. When one sees this arrangement for air poisoning, of which the gauntlet is run regularly twice a day, and remembers that the intervening hours have in most cases been passed in an ill-ventilated warehouse, the counting-house of which is generally the worst ventilated of all, it is not to be wondered at that most of these young men look weakly and anæmic and that too many of them die prematurely from consumption. At the meeting of the Salford council the other day Mr. Pinder, a member of our profession, drew attention to the bad ventilation of the street cars. Improvement had long been promised and he thought the time had come for these promises to be carried out, as it was important for the health of the public. The present system, he said, "was crude and the inside of the cars contained a poisonous atmosphere, while the odour, especially in the hot weather, was appalling." Another of the councillors suggested that "if the motor-man would only open the door of the car at the terminus a little fresh air might get into the car before it started its journey, but he seemed afraid of opening the door." Mr. Pinder proposed a motion, which was carried, that the tramways committee should be instructed to furnish the cars with an efficient system of ventilation. May success attend its efforts, for they are needed.

July 26th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Housing Problem in South Wales and Monmouthshire.

THE prosperity of the mining industry in certain parts of South Wales and Monmouthshire has created problems in the housing question which have not arisen in other localities. When the colliery districts were being opened out some 40 or 50 years ago it was the custom for the colliery proprietors to provide houses for their workmen in proximity to the workings. In some instances these were one-storeyed wooden cottages and in other cases more substantial structures of brick or stone were erected. Later private speculation and building clubs sufficiently met the wants of the rapidly increasing population but during the last eight or ten years a scarcity of houses has been apparent in many districts owing partly to the increased cost of building and partly to the fact that private speculators were afraid to risk their capital in localities where the closing of a colliery renders the surrounding house property valueless. A very large number of houses have thus come to be occupied by more than one family and in many others single men are taken as lodgers. The sanitary officials are often reluctant to take steps to close uninhabitable houses because the occupants cannot find others more habitable. Many sanitary authorities appear at last to be realising that they must remedy what is recognised as a serious and growing evil. The Merthyr urban district council has erected 100 cottages between Merthyr and Dowlais and the undertaking appears so far to have been successful. The Ogmore and Garw urban district council has decided to build 100 houses in two different parts of the district at a cost of £175 per house. This decision has been arrived at owing to strong representations having been made by the South Wales Miners' Federation which pointed out that a large number of houses with only proper accommodation for one family were occupied by two or even three families. At Neath a site has been obtained for 63 houses and the urban district council proposes to erect 49 at a cost of £120 each. These houses will contain a large living room, a scullery, and two bedrooms. The Pontypool urban district council is negotiating for land upon which to build 170 houses and the Abercarn urban district council has obtained sanction from the Local Government Board for a loan of £6150 for the purpose of erecting workmen's houses and a tender has been accepted for the building of 28 houses at £200 each. The Bedwellty urban district council, after meeting with some opposition, has decided to build 16 cottages at New Tredegar, each with three bedrooms.

The Western Counties Branch of the British Dental Association.

The annual meeting of the Western Counties branch of the British Dental Association was held at Frome, Somerset, on July 22nd under the presidency of Mr. A. G. Hayman who

gave an interesting address on the Progress of Dental Surgery. Papers were read by Mr. L. L. Smith on Different Methods of Treatment for Live and Dead Pulps. Mr. R. Willcox contributed Notes on Treatment of Exposed Pulps by Anæsthesia produced by Local Pressure, after which a demonstration was given by Mr. W. de C. Prideaux on Boesch's Anchors for Porcelain Inlays. In the evening the dinner was held at the George Hotel when several members of the medical profession were present.

The Cornwall County Nursing Association and the Midwives Act.

Lord Mount-Edgcumbe in a letter to the local press draws attention to the subject of the registration of the nurses of the Cornwall County Nursing Association under the Midwives Act. He states that as a result of a meeting of members of the association and medical men it was resolved that if the County Nursing Association would make rules to insure that its nurses are not to attend a confinement without a medical man in cases where the total earnings of the patient's household exceed 30*s.* weekly and that the nurses should never interfere with the patient's selection of her medical attendant there could be no objection to the nurses being registered and practising under the Act; all the village nurses of the association are holders of the certificates of the London Obstetrical Society. Lord Mount-Edgcumbe adds that the committee will meet on July 30th when the matter will be finally settled, and he is anxious in the meantime that members of the medical profession should clearly understand how the association has tried to solve this difficult subject.

Shell-fish and Enteric Fever.

At the meeting of the St. Thomas's rural district council held on July 16th the medical officer of health, Mr. M. Farrant, reported two cases of enteric fever contracted from eating cockles. The medical officer of health of Torquay (Dr. T. Dunlop) has issued notices urgently advising the inhabitants of the town and neighbourhood to refrain from eating cockles and mussels. He states that most of the shell-fish sold are collected from beds of rivers into which large quantities of town sewage are poured and consequently the risk of carrying germs of disease to the consumer is very great.

Geological Model of Bath.

The medical officer of health of Bath (Dr. W. H. Symons) has completed an excellent geological model of the city of Bath and the surrounding district, covering an area of 36 square miles. The horizontal scale is six inches to the mile and the vertical scale is six inches to 1000 feet. The model has been placed in the museum of the Royal Literary and Philosophical Institution and it will no doubt be consulted with advantage by intending residents in the city.

July 28th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh Graduation Ceremonial.

ON July 23rd the summer graduation ceremonial of the University of Edinburgh was held in the M'Ewan Hall. The Vice-Chancellor, Principal Sir William Turner, presided. There were five recipients of the honorary degree of Doctor of Laws—namely, Samuel Henry Butcher, Litt.D., LL.D., lately professor of Greek in the University of Edinburgh; the Hon. Sir Walter Francis Hely-Hutchinson, G.C.M.G., Governor and Commander-in-Chief of the Cape of Good Hope; the Right Hon. John Morley, M.P., P.C., O.M., F.R.S., LL.D., D.C.L.; Sir George Reid, LL.D., D.L., lately President of the Royal Scottish Academy; and Professor William Thomson, M.A., B.Sc., Registrar of the University of the Cape of Good Hope. The degree of Doctor of Medicine was conferred on 59 graduates. Three candidates obtained gold medals—namely, Thomas Lowe Bunting, M.B., C.M., 1889, for a thesis on the Histology of the Lymphatic Glands; John Cameron, D.Sc., M.B., Ch.B. (with second-class honours), 1898, for his thesis on the Development of the Retina in Amphibia, an Embryological and Cytological Study; and William Hogg Prentice, M.A., M.B., Ch.B. (with second-class honours), 1901, the title of his thesis being "Some Notes on the Action of African Cobra Venom." Two candidates obtained the degree of Bachelor of Medicine and Master in Surgery, while the degree of Bachelor of Medicine and Bachelor of Surgery was conferred on 124 candidates of whom nine were women. Professor D. J. Cunningham, F.R.S., Promoter of the Faculty of Medicine, delivered the customary address to the graduates, his subject being the Evolution of the Graduation Ceremony. At the close of the address the honorary graduates attended a reception in the Students' Union and were afterwards entertained to luncheon in the union dining-room, Mr. A. F. Whyte, president of the union, being in the chair. In the course of the luncheon speeches were made by Mr. John Morley, Sir Walter Hely-Hutchinson, Professor Thomson, and Emeritus Professor Butcher.

Royal College of Physicians of Edinburgh.

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on July 19th, Dr. T. S. Clouston, the President, being in the chair. The President made feeling reference to the loss which the College had sustained by the death of Dr. Peter Young, a Fellow of the College. Harry Oliphant Nicholson, M.D. Aberd., was introduced and took his seat as a Fellow of the College. On a ballot the following candidates were admitted to the Membership of the College after examination: James Cameron, M.D. Edin., Edinburgh; George Douglas McRae, M.B., C.M. Edin., Edinburgh; Alexandre da Foncêca Dias, L.R.C.P., L.R.C.S. Edin., Edinburgh; Theodore Charles Mackenzie, M.B., Ch.B. Edin., Edinburgh; and Thomas Garnet Stirling Leary, M.B., Ch.B. Edin., Castlederg, Tyrone. The Registrar reported that since the last quarterly meeting 31 persons had obtained the licence of the College by examination. The regulations regarding the single licence and membership and fellowship of the College for the ensuing year and the regulations for the triple qualification were approved. The Hill Pattison-Struthers bursary in clinical medicine, which is in the gift of the College, was awarded after examination to Mr. James Watson. With regard to the proposed institution of an academic dress distinctive of licentiates of the College, it was resolved to delay consideration of the matter.

City of Glasgow Fever Hospital, Ruchill.

Dr. Alexander Johnston, physician and superintendent of this hospital, recently submitted to the committee on health the report of the hospital for the year ending May 31st, 1903. The number of admissions for the year amounted to 2047, whereas for the two preceding years they numbered 3012 and 2251 respectively. This represents, says Dr. Johnston, the comparative scarcity of infectious diseases in the city of Glasgow. The general mortality-rate was 8·8 per cent. Nearly 60 per cent. of the new patients admitted were under ten years of age. The number of cases of scarlet fever numbered 847, or 41·2 per cent. of the total admissions. 21 of these patients, or 2·4 per cent., died, the lowest mortality rate on record in the history of the City of Glasgow fever hospitals. The cases of diphtheria numbered 215, with 42 deaths. The mortality rate of 19·5 per cent. was the highest yet recorded in Ruchill, but of the fatal cases 20 were admitted moribund. 246 cases of enteric fever were admitted of which 45 died, giving a mortality rate of 18·2 per cent. The number of cases of measles was 159, the death rate being 6·2 per cent. The deaths from this disease were almost all due to pulmonary complications, and no death was recorded of any patient over ten years of age.

July 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dispensary Medical Officers.

THE latest device to deprive the unfortunate dispensary medical officer of one of his few remaining privileges has recently been put in practice at Kinsale. Hitherto, where a medical officer was able to obtain a month's holiday, he was permitted to choose as a substitute some friend or neighbour to whom he could intrust not only his public duties but also the charge of any private patients whom he chanced to have in his district. Now, the boards of guardians have apparently determined to nominate for themselves as a locum-tenent any man whom they choose to elect as their favourite. It seems tyrannical. At the last meeting of the board of guardians of the Kinsale union

on July 20th Mr. W. G. Meade was given four weeks' leave. He recommended Mr. J. Keating, whose district adjoined, as his substitute, but the guardians insisted on appointing another man from the neighbourhood, whereupon Mr. Meade withdrew his application for leave, stating that if he could not choose his own locum-tenent for his dispensary duties with also the charge of his private patients, if, in fact, he could not go away on his vacation comfortably, he would prefer to remain at home. At the same meeting Mr. A. O'Leary recommended Mr. J. Shorten, whose district adjoins, as his temporary holiday substitute. The guardians, however, proceeded to appoint a local practitioner whom they selected. Mr. O'Leary took the same view as Mr. Meade, with the result that both medical officers withdrew their applications for leave and elected to remain at home. The situation seems disgraceful and one is inclined to ask, Where is the Local Government Board? As to the grievance in reference to salary, at the meeting of the Bantry guardians held on July 19th, Mr. Bennett of Bantry appeared before the board as the representative of the Irish Medical Association and asked the board to fix the salary for the district of Glengarriff at a higher amount than £100 a year, as it would be impossible for any medical man to live in that backward district, where there was scarcely any private practice, on so small an income. The guardians decided to offer only £100 a year in the first instance, but if they did not receive any applications on that day month, when the appointment was to be made, they would increase the amount. English visitors will remember that during the summer months Glengarriff, which is near Killarney, is one of the loveliest spots in the British Islands. Many think it more beautiful than Killarney—but even an Irish dispensary medical officer cannot live on scenery.

Dublin Sanitary Association.

The council met on July 21st at the offices of the association, the President occupying the chair. The progress of the outbreak of measles in Dublin was traced by a reference to the Registrar-General's weekly returns. It appears that on Saturday, July 9th, there were 83 cases of this disease under treatment in the Dublin hospitals and on Saturday, July 16th, there were 77 cases. During the week ending July 23rd ten deaths were registered from measles, the numbers during the preceding three weeks being one, two, and two respectively. The following motion was adopted unanimously:—

That as Dublin is again suffering from an epidemic of measles, and as it will be quite impossible to provide hospital accommodation for all the cases, the council of the Dublin Sanitary Association are of opinion that effect should be at once given by the various metropolitan sanitary authorities to a suggestion made by this association in the summer of 1902 and partially adopted—namely, that district nurses should be appointed in each dispensary area for the purpose of nursing those sick of measles in their own homes.

New Medical Magistrate.

The Lord Chancellor has appointed Mr. John F. Sydney Colohan of Blackrock a justice of the peace for the county of Dublin on the recommendation of the Right Hon. the Earl of Meath.

The New Royal Victoria Hospital, Belfast.

Those who make a study of hospital construction, and especially of the much debated question of heating and ventilation, will be interested to learn some facts as to the working of the plenum system in the new Royal Victoria Hospital, Belfast, which was opened by His Majesty the King just a year ago. The work of heating and ventilating the hospital during that time has been very successful. The lowest temperature recorded in the open air in the neighbourhood of the hospital was 22° F., while inside the institution the average temperature was kept at from 59° to 62°. The average weekly consumption of coal during the winter was 45 tons. This fuel is used to heat the boilers which provide the steam for the engines which work the great fans of the plenum system. This steam is also used to heat pipes which warm the air; it is likewise employed for sterilising the dressings and the instruments in the operating theatres, for cooking and laundry purposes, and for heating those parts of the administrative buildings which are not connected with the plenum system. During the present summer the highest temperature so far has been 124° in the sun or 79° in the shade, while at the same time the temperature in the wards was 65°. The average temperature in the wards has been from 63° to 65°, with an outside heat of 72°. During the summer the average consumption of coal has been from 18 to 20 tons per week. In the winter one fan was sufficient but in the summer it has been found necessary in order to keep the wards cool to have the two fans going, because in this way the air is changed in the wards ten to 12 times in an hour. In the winter it was found sufficient to change the air seven to eight times an hour and one fan was enough to do this. The two fans have been kept in action since June 1st and will probably be continued until the end of September. It costs no more to run the second fan, the engine being so constructed that it is underloaded with one. In the lofts above the engine house there are tanks of water with an automatically-regulated overflow, so that in winter 15 gallons flow over three screens of coir matting by which the air is washed every ten minutes, while in summer 30 gallons flow over six screens every five minutes. In addition, these screens are "hosed" every second day and the main air duct washed out once a week, so that as a result the air as it enters the wards is deprived of impurities and leaves no trace of discoloration.—Lord Dunleath, who is closely connected by family ties with Belfast, has given £1000 to the Royal Victoria Hospital to endow two beds, "The Dunleath Beds," in the Mulholland Ward, which was named after his grandfather, the late Mr. Andrew Mulholland. It is hoped soon that another unit—that is, 32 beds—will be opened.

Ulster Branch of the British Medical Association.

For the session 1904–05 Professor J. A. Lindsay has been elected President, Dr. Cecil E. Shaw secretary, and Dr. J. S. Darling (Lurgan) treasurer.

Action against a Medical Man.

A case which was heard at the Belfast assizes last week has occasioned a considerable amount of attention in general and medical circles, but as the jury failed to agree and as consequently there may be a new trial I am precluded from commenting on the action and simply state the facts. The action was brought by Alfred Ernest Tughan, a minor, by his father, against Mr. C. K. Darnell of Bangor, co. Down, to recover £250 on account of personal injuries alleged to have been sustained by reason of the negligence of the defendant. A very strong bar was engaged on each side, the defence being in the hands of the Medical Defence Union. It appears that the young gentleman, Mr. Tughan, the plaintiff, who is just over 17 years of age, had been suffering from mumps in Belfast and on recovering was taken to Groomsport, a seaside resort near Bangor, on Belfast Lough, and that while there he developed the rather rare complication orchitis as a sequela of the mumps and Mr. Darnell was on April 4th called to see him. Mr. Darnell explained what was wrong and wrote two prescriptions, one for internal medicine and the other for external use—a liniment—about which all the litigation has arisen. This was composed of soap liniment and belladonna and, according to the evidence for the plaintiff, it was to be sprinkled on lint and applied continuously to the part until April 9th. Half a yard of lint was ordered together with half a pound of absorbent wool for a cushion. The mother applied the liniment with the result that the skin became blistered and belladonna poisoning set in. Mr. Darnell had in the meantime left home and the plaintiff's father employed other medical men—one in Bangor and two from Belfast, one of these being his brother-in-law. For the defence it was contended that the defendant specifically directed that the liniment was to be used only in case pain arose and his case was that the wrong use of it by the boy's mother did the harm. Further, Mr. Darnell swore that he told the plaintiff's father that he was leaving home for a few days and that if the boy was not so well his father was to get any of the other medical men in Bangor, and when Mr. Darnell's wife was told that the boy was ill she sent a local medical practitioner to see him. The Belfast consultant who saw the boy with this Bangor practitioner was not called by the plaintiff. For the defence several medical men were called, their evidence supporting the contention that the treatment as directed by Mr. Darnell was correct. The judge in an impartial summing up left the case to the jury who after an absence of an hour and 15 minutes announced that they had not agreed and as the foreman said in reply to the judge that there was not the slightest chance of their agreeing they were discharged. Owing to the case being still undecided no reference can be made to the extraordinary attacks on the medical profession as a body, on medical testimony and etiquette, and on the Medical Defence Union which acted for the defendant.

July 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Destruction of Mosquitoes.

SEVERAL parts of Paris are so infested with mosquitoes that at a recent meeting of the Conseil d'Hygiène et de Salubrité de la Seine a report on methods by which they might be kept in check was considered. The following is a summary of the conclusions which were adopted. In the first place stagnant water where their eggs are hatched and localities where the insects collect, such as cellars, sewers, and dark places, ought to be kept under observation. It was necessary to have regular inspections of drains and sewers of all kinds and of the openings of the pipes which supply water in the streets, to avoid collections of stagnant water, and where insects assemble in numbers to destroy them either by a burning torch or by lime-washing. Stables and privies ought to be kept very clean, roofs and rain-water gutters ought to be examined, and water ought not to be allowed to lodge in the gutters. Nothing capable of holding water should be placed in front of windows and places which are the haunts of mosquitoes should be well ventilated. Stagnant water should not be allowed to remain in gardens and courtyards. Fountains and basins in public places should be emptied and cleansed at least once a week and plenty of fish should be kept in large sheets of water. In basins and casks standing on private ground there should be a layer of petroleum oil on the surface of the water (about a gramme per square metre) or if the water contains fish a layer of salad oil. The public should be advised to use mosquito curtains. Mosquito bites should be treated with a drop of tincture of iodine or with a drop of a solution of guaiacol of 1 per cent. strength.

Lactation and Pathogenesis.

At a recent meeting of the Academy of Sciences M. Charrin and M. Vitry said that lactation was generally considered to be capable of producing in the organism a series of changes more or less favourable to the development of disease and experiments made by them had shown the nature of these changes. In a guinea-pig which was in milk the convulsions brought about by a dose of strychnine were both earlier and more intense than those due to the same dose administered to a guinea-pig which was not in milk; death was sometimes even caused by doses which were not fatal to the control animal. The power of resistance to infection was similarly weakened; a dose of a culture of bacillus pyocyaneus which would cause only a temporary lesion in the control animal might prove fatal to an animal giving milk. This diminution of resisting power was partly due to the attenuation of the antitoxic protective substances and more particularly to the diminution of the antitoxic power of the liver. A piece of normal liver left in contact with a solution of nicotine weakened it more than an equal weight of liver substance taken from an animal giving milk. If to these causes were added hyperglycæmia and fæcal retention it would be seen that lactation predisposed to disease by accumulating organic poisons, by diminishing the natural powers of resistance to such poisons, and in establishing conditions favourable to infection; it, in fact, prolonged the dyscrasiæ associated with pregnancy.

Public Medical Service in Madagascar.

At a meeting of the Academy of Medicine held on July 12th M. Kermorgant communicated some particulars taken from a report presented by General Gallieni relative to the working of the medical and public health services for natives (*assistance médicale et de l'hygiène publique indigène*) in Madagascar during 1903. On Jan. 1st, 1904, the service received the important addition of a school of medicine to which was attached a native hospital, a Pasteur institute at Tananarive, a station for the production of vaccine lymph at Diégo Suarez, a central pharmacy, 129 hospitals containing 1867 beds, ten dispensaries, 17 stations for midwives, and seven leper hospitals. The hospital of the colonial service and certain private establishments also gave assistance. The medical service leaves nothing to be desired in the provinces of the central plateau; the total outlay on it was 1,019,042 francs (£40,760); 16,788 persons have been treated in the hospitals; 3079 lepers have been isolated; 1,023,425 patients have received advice; and 70,991 vaccinations have been performed. There has been a notable increase in the number of cases of malaria, attributable, it would seem, to the fact that after the rice has been harvested the rice fields are again flooded with water instead of remaining dry, as in former years, and the mosquitoes therefore breed more freely. The birth-rate in Madagascar is considerably higher than the death-rate.

Disadvantages of Sterilised Food.

If full-grown animals are kept in a sterile atmosphere and fed on sterilised food their vitality is brought down below that of control animals treated similarly in all respects except that the access of microbes to them is not interfered with. This has been already proved by M. Charrin and at a meeting of the Academy of Sciences, held on July 11th, he gave an account of new experiments which supply an explanation of the phenomena. Proportionally to their weight all the animals received the same quantity of the same food (carrots) sterilised in the same way at 100° C., but the sterilised carrots for the control animals were dusted over with some of the earth which had previously covered them. In these circumstances, the animals fed on the sterile food generally died in from three to five weeks, predeceasing the control animals. In the few cases in which guinea-pigs after ingestion of microbes died before the others the usual reason was that exceptionally virulent bacteria had been introduced along with the dust. In the animals fed aseptically enteritis with retention of bile and softening of the walls of the ileum was common. The microbes soon became less numerous; those which usually occurred in the intestine were normally in that situation under disadvantageous conditions owing to the presence of phenol, ammoniacal salts, mucus, and competing forms of life, as well as to the scanty supply of oxygen for the aerobic organisms; importations from without, especially those which came with the food, were therefore necessary for keeping up the stock. Cultures made in glass with material taken from the guinea-pigs fed aseptically showed only cocci, the bacilli having disappeared, whereas in the control animals at the same stage of the experiment the latter forms predominated. In the animals fed aseptically albumin was less quickly peptonised and cellulose was less readily attacked than in the others. The nutritional conversion of cellulose and the proteid constituents of the food was diminished in the animals fed aseptically and these substances acted as foreign bodies, irritating the mucous membrane and producing symptoms of gastro-enteritis with their consequences. It was therefore plain that some microbes were not only not injurious but were of decided utility and that the conditions in which the sterilisation of food was advisable still remained an open question.

Accidents in Laboratories.

While M. Dubreuil, *agrégé* of the University, was engaged in some researches in the laboratory of the École Pratique des Hautes Études a flask of hydrogen exploded and a laboratory assistant received an injury which resulted in the loss of his right eye. He therefore brought an action for damages against M. Dubreuil and the State. The director of the school, being a public teacher, is legally responsible for the harm done by his pupil M. Dubreuil, and the State being represented by the director is consequently responsible also. The court, however, without controverting this argument, dismissed the claim made by the assistant against the State, but M. Dubreuil was ordered to pay him an annuity of 500 francs.

July 26th.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.—During the past year there have been 1122 specimens examined in the bacteriological department, showing an increase of 184 over the previous year. The great majority of the specimens are examined for the various county councils and public institutions in the neighbourhood. Out of 650 specimens of sputum examined for tubercle bacilli 39 per cent. were found to be positive. Out of the 223 cases of suspected diphtheria 35 per cent. were found to be positive, whilst from 79 specimens of blood from suspected cases of enteric fever 32 per cent. were positive. The Newcastle water was examined every month, also water for other public bodies. Ten specimens of blood were examined for anthrax with positive results in five cases. Tubercle bacilli were found in urine in five cases out of 39.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD.

THE seventy-second annual meeting of the British Medical Association commenced at Oxford on Tuesday last and marked the fourth occasion on which the Association has chosen the university city for its annual meetings. Unfortunately the meeting has not been favoured with good weather. On Monday afternoon, just as visitors began to arrive, a thunderstorm accompanied by torrents of rain broke over the city and rain continued to fall more or less heavily all night. On Tuesday the morning was fairly fine but the afternoon and evening were a repetition of Monday. Wednesday, again, opened very badly and the rain continued for the best part of the morning. The bad weather was the more unfortunate that Oxford is pre-eminently a place which needs sunshine to show off its beauties. The gardens and groves, such as those of Magdalen, New College, and Worcester, lose half their charm when visited under a grey dripping sky.

The means of getting about in Oxford are of the primitive order, there being only a few horse-tramcars and omnibuses with very long intervals between their running. The citizens apparently largely rely on their cycles for locomotion and have a fine disregard for the terrors of side-slip as they cross and recross the not too well-laid tracks in the neighbourhood of the heart of the city. Fortunately, cab fares are reasonable, with the consequence that the weather has made the cab-driver busy.

The service held in Christ Church Cathedral at 10.30 A.M. on Tuesday was exceedingly well attended. The sitting accommodation was, in fact, strained to the utmost and it was stated that the congregation was one of the largest ever gathered together in the chief church of the diocese. The assembling of the congregation was imposing as those wearing academic robes took their places. The mayor and his civic staff occupied seats in the choir. The Rev. the Master of University College preached the sermon. The alms, as is usual, were devoted to Epsom College and the British Medical Benevolent Fund. There was also a special Mass at the Church of St. Aloysius at the same hour.

On Tuesday evening the President of the Association, Dr. William Collier, delivered his address in the Sheldonian Theatre. The beautiful building (one of Wren's earliest works) was filled by an audience gathered from many a university and by a number of ladies. Academical dress was, of course, worn by those who had a right to do so; but there existed an unfortunate diversity of opinion as to what "academical dress" meant and the "use" was exceedingly varied. Some doctors wore their scarlet gowns either with or without hood, others wore the undress gown with a hood (this, of course, is obviously wrong), and others wore the undress gown by itself. However, the general effect was a very charming mass of colour.

The proceedings commenced by the Vice-Chancellor, Dr. D. B. Monro, welcoming the Association on behalf of the University, and he was followed by the mayor, Mr. E. A. Bevers, M.R.C.S., who performed the same office on behalf of the city. The Middlemore prize was then presented to Mr. J. H. Parsons for his researches in ophthalmology, after which the President announced the election of the following gentlemen as honorary members of the Association in recognition of their valuable services in connexion with the meeting: The Vice-Chancellor of the University of Oxford (Dr. Monro), the Dean of Christ Church (the Very Rev. Thomas Banks Strong, D.D.), and the Master of University College (the Rev. James Franck Bright, D.D.). Then followed the presentation of the distinguished foreign guests and colonial delegates, among the former being Professor William Osler of Baltimore, Dr. Edmund Landolt of Paris, Professor Hirschberg of Berlin, and Professor Guglielmo Romiti of Pisa, while the colonial delegates came from practically every part of the empire. Dr. Collier then delivered his presidential address, which will be found in another column.

It was confidently anticipated, owing to the splendid attractions of Oxford, that the attendance of members would be large and this did much to secure an increased application for space in the Annual Exhibition of Foods, Drugs, and Surgical Appliances. The exhibition was held in two palatial rooms on the first floor of the Examination Schools in the High-street, the space afforded was generous, and altogether the exhibitors evinced excellent taste in displaying their exhibits. On no previous occasion has the exhibition been held under more favourable auspices and although the satisfactory attendance of visitors may be attributed partly to the fact that the reception-room and general meetings room were situated in the same spacious building, yet, apart from this, there was an evident increasing interest in this important section of the annual meeting.

A welcome feature in this year's exhibition was the display of scientific apparatus. We have often urged that considerable prestige would be added to this section of the proceedings if some really scientific demonstrations could be arranged. It must be admitted that on the whole the annual exhibition wears a business aspect, against which, however, nothing can be said so long as trade is conducted on dignified lines. The claims of many new drugs and foods are occasionally pressed with perhaps a little more zeal than the visitor appreciates. This is pardonable when the chances which the exhibitor has of actually bringing his specimens under the eye of busy practitioners are considered. It cannot be denied, however, that the annual exhibition is of decided value to the medical man who means to keep pace with the advances made in pharmaceutical preparations, in special foods, surgical apparatus, and so on. All the same, it is a relief to him to confront if only occasionally a really scientific demonstration, and the opportunities which have been afforded this year may be noted with satisfaction.

Probably the majority of the exhibits could be placed in the category of surgical, sanitary, and hospital appliances, and generally speaking perhaps the exhibition had a greater interest for the surgeon than for the physician. New drugs, synthetic remedies, or methods of administration seemed decidedly less in evidence than has been usually the case. In another column the various exhibits are dealt with in some detail and while the convenient classification adopted in previous years is the same, the various sections are taken in a slightly different order in accordance with the scale on which they were represented.

In a Convocation held on Wednesday in the Sheldonian Theatre, which was filled with a brilliant gathering, the degree of D.Sc., *honoris causâ*, was conferred upon the following gentlemen: Thomas Clifford Allbutt, M.D., F.R.S., Regius professor of physic at Cambridge; Andrew Clark, F.R.C.S., Vice-President and chairman of the Council of the British Medical Association; Thomas Dryslwyn Griffiths, M.D., late President of the British Medical Association; Jonathan Hutchinson, F.R.S., late President of the Royal College of Surgeons; Sir William Macewen, M.D.,

F.R.S., Regius professor of surgery in the University of Glasgow; Sir Patrick Manson, K.C.M.G., M.D., F.R.S.; Sir John William Moore, M.D., late President of the Royal College of Physicians of Ireland; and William Osler, M.D., F.R.S., professor of medicine at Johns Hopkins University, Baltimore. The various recipients of the degree were severally introduced to the Vice-Chancellor by the Sedleian professor of natural philosophy, Professor A. E. H. Love, D.Sc.

During the meeting the question of medical defence has been more or less hotly discussed. It has now been finally decided by the representative meeting that the question of medical defence, as submitted to all the divisions of the Association, shall be referred to the original committee that dealt with the question, with instructions that in framing any scheme of medical defence both collective and individual defence should be included. There has been a considerable amount of talk pointing to the idea that medical defence should be provided for members of the Association without any increase of subscription, but the notion has failed to secure sufficient support at any meeting of the members to make it an instruction for the committee concerned with the matter to consider it. This committee, however, has been charged with the duty of stating, in its revised scheme, or statement, to be submitted to the divisions, in what way provision is to be secured for the amalgamation of the existing medical defence societies. It is not to be wondered at that the problem of medical defence has been referred to the committee, nor will this course of events come as a surprise to the most ardent advocates for immediate action.

To many members of the medical profession visiting Oxford Trinity College presented considerable attractions, not only for its architectural details but also for the interest attaching to it as the place where in the troublous times of Charles I. "so great a doctor" (as Aubrey called William Harvey) went "several times to George Bathurst who had a hen to hatch eggs in his chamber, which they opened daily to see the progress and way of generation." William Harvey stayed in Oxford occupied with his researches for so long that the wardens and masters of St. Bartholomew's Hospital placed a Dr. Micklethwayte in his position at that institution, accusing Harvey of having withdrawn himself from his charge and betaken himself to the party in arms against the Parliament. Merton College, however, at that time had a warden named Brent who was accused of absenting himself from his duties for three years, of joining the rebels, and of signing the Covenant. William Harvey was elected warden of Merton College in his place and informed the Fellows assembled in the Great Hall that though previous wardens had most likely joined Merton to enrich themselves he only wished to enrich the College, and he exhorted them to cherish harmonious friendship among themselves. During Harvey's term of office at Merton the College must have presented an animated appearance for its chambers were crowded with officers quartered there and the Queen lodged in the warden's house, occupying the room shown to many visitors this week as "the Queen's Room."

We have again to record our indebtedness to Mr. Guy Elliston, the general secretary of the Association, and to his staff, for the courtesy and much appreciated help extended to the representatives of THE LANCET in several directions.

The seventy-third annual meeting of the Association will be held at Leicester in 1905, Mr. G. C. Franklin, F.R.C.S. Eng., being nominated as President-elect.

THE GENERAL MEETINGS.

THE FIRST GENERAL MEETING.

The first general meeting was held in the Examination Schools, High-street, on Tuesday, July 26th, at 12 noon.

The chair was occupied by the retiring President, Dr. T. D. GRIFFITHS, who, in addressing the meeting, referred in sympathetic terms to the loss sustained by the medical world through the death of Sir John Simon. "We may affirm," he said, "that he has saved far more lives during the last 50 years than all the armies of the world have destroyed during the same period." Dr. Griffiths then proceeded to review the work of the Association during the past year and observed that they had arrived at the close of the first year of their new constitution and the result was fully in accordance with their anticipations. The changes and the alterations were now practically complete, the various divisions, numbering 300 altogether, had settled on their own rules and regulations, and he drew attention to the great advantage accruing from the divisions—viz., that they answer all the purposes of local medical societies. The speaker then drew attention to a further gain attained by the reconstruction of the Association in securing additional power to promote the interests of the profession, to improve public health, and to protect the well-being of the community by guiding and influencing legislation in Parliament. The retiring President then formally introduced the new President, Dr. William Collier.

Dr. COLLIER in taking the chair expressed his thanks to the members for the high honour conferred on him. He soon secured the sympathy of those present by the earnest manner in which he spoke of his duties, whilst his humorous description of the difficulties incident to the meeting of the Association at Oxford put him on good terms with his audience. He hoped, he said, that the members of the Association would not trouble to appear at Oxford in the obsolete garments of conventionality but would revel in light hats, light coats, and light hearts.

Dr. J. H. GALTON proposed, and Mr. W. JONES MORRIS seconded, a cordial vote of thanks to the retiring President which was carried with acclamation.

After Dr. GRIFFITHS had made a suitable acknowledgment, the following gentlemen were elected honorary members of the Association for valuable services rendered to the Association in connexion with the Oxford meeting: Dr. D. B. Monro (Vice-Chancellor of the University of Oxford), the Very Rev. Thomas Banks Strong, D.D. (Dean of Christ Church), the Rev. James Franck Bright, D.D. (Master of University College), and Professor A. G. V. Harcourt, M.A., F.R.S. The chair was then vacated by the President in favour of Mr. ANDREW CLARK, chairman of the Council, who called upon Dr. E. M. Skerritt, the treasurer, to propose that the financial statement for 1903 should be received and adopted. This was duly proposed by Dr. SKERRITT, and after Dr. J. HADDON, Dr. J. BRASSEY BRIERLEY, and Mr. E. H. T. NASH had spoken, and been replied to by Dr. SKERRITT, the motion was put to the meeting and duly carried.

After passing some more or less formal votes the meeting adjourned.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 27TH.

Discussion on the Treatment of Chronic Renal Disease.

After a few introductory remarks by Dr. W. T. BROOKS (Oxford), President of the section, a discussion on the above subject was opened by

Dr. W. HALE WHITE (London) who said that he intended to limit his remarks in the discussion to the consideration of the treatment of chronic interstitial nephritis. So little was known of the pathology of the disease that the treatment fell naturally under two headings: (1) the treatment of particular symptoms; and (2) treatment employed according to the physician's theoretical views on the nature of the disease. Albuminuria was a symptom frequently treated. The mere presence of albumin in the urine was of itself of no importance, except as an aid to diagnosis, as the amount of proteid lost daily in the form of albumin was very small. Albuminuria occurred in heart disease, fevers, calculus, and other conditions, and was never treated in those cases.

The loss of albumin was at most only a few grammes a day and might be compensated for by more in the food. Albuminuria was, however, a very important help to the diagnosis and prognosis of Bright's disease but the records of it were usually of little value as they noted only the percentage and not the total quantity of albumin. Not only was the treatment of albuminuria as such unnecessary but in many carefully observed cases a milk diet, which is relied upon to diminish albumin, failed to accomplish this. The cardio-vascular system required most notice from the point of view of treatment in chronic renal disease. Many patients had a high tension pulse and a hypertrophied heart; in such cases the tension must be reduced by restricting exercise, regulating the bowels, avoiding alcohol, meat extractives, excess of meat food, and the drinking of much fluid. Digitalis should never be ordered for such patients. In a second class of cases the tension of the pulse was too low and the heart was weak. Over and over again physicians forgot that to starve one part of the body involved starvation of the whole, and thus patients kept on a small milk diet in the hope of relieving the kidneys became enecbled in their general health with consequent cardiac failure. Such patients improved on ordinary diet, with a moderate amount of meat and alcohol. Some patients were kept too much in bed, with the result that the heart became feeble; they improved when they were allowed to get up. On the other hand, many patients took too little exercise and became fat and some drank too much water. In both conditions the work of the heart was unduly increased. The physician should endeavour to keep the vascular tension normal without the aid of drugs. Œdema in chronic nephritis rarely required treatment except when due to secondary cardiac failure. The bowels should be well opened and the fluid ingesta restricted. In severe œdema diuretics should be avoided and diaphorectics were of little use. Puncturing the legs with needles or Southey's tubes was the best method of relieving both local and distant œdema, but it should be remembered that no operation required greater care in avoiding sepsis. Turning to the consideration of treatment as influenced by theoretical views of the nature of the disease, substances supposed to irritate the kidney, such as turpentine and cantharides, should never be employed and mercury and lead should never be given for any length of time. There was wide divergence of opinion as to the administration of morphine, undoubtedly it checked uræmic convulsions, but it sometimes killed the patient. Alcohol was permissible in small quantity when the heart was weak to aid digestion and to promote sleep. Patients with chronic interstitial nephritis were often dicted too zealously under the impression that certain articles of food irritated the kidneys; there was no proof of this and no series of cases had been published to show that either chicken, fish, red or white meats were harmful. Restrictions only tended to make the patients introspective. Patients with chronic parenchymatous nephritis were often dieted wrongly, especially when they reached the stage at which recovery was impossible, being kept on a milk or farinaceous diet when they loathed the sight of it. Tea, coffee, and tobacco should be used in moderation by sufferers from chronic nephritis, as either of these in excess caused a rapid and irregular pulse. An excess of water was often given to flush the kidneys and to clear away dead epithelium, but where there was most dead epithelium the œdema was greatest and this could not subside when much water was drunk. Other objections were that excessive water drinking increased the nitrogenous metabolism and the work of the heart. The symptoms of uræmia were suggestive of a poison in the blood, but there was no evidence that it was derived from the food. A woman took 5000 kilocalories of food a day for 55 days; during that time she retained 120 grammes of nitrogen but no uræmic symptoms developed. Probably the uræmic poison was formed from the tissues of the body. The physician could only aid the elimination of the poison by means of hot-air baths and hot drinks to assist perspiration or by transfusion of saline fluid. Pilocarpine was apt to cause œdema of the lungs. Chloroform relieved uræmic convulsions. Egypt had an ideal winter climate for patients with renal disease, but it should be remembered that warm clothes were required after sundown and proper food for invalids might be difficult to obtain far up the Nile.

Professor CARL VON NOORDEN (Frankfort, Germany), alluded to the paper which he read at the Manchester meeting of the British Medical Association regarding several points of treatment of chronic Bright's disease. First, regarding the difference of white and red meats he was the first who showed by scientific investigation that the red meats were no more harmful than the white meats in chronic Bright's disease. All the publications which had appeared since then agreed with his opinion, as did also Dr. Hale White. Secondly, regarding the supply of water in chronic Bright's disease, he had shown by clinical observation and research on metabolism that the restriction of fluid (one and a half litres daily) did not diminish the elimination of urea on the one hand, and on the other it spared the heart. A third question studied by Professor von Noorden was the amount of muscular exercise advisable in chronic renal disease. He did not consider it wise to keep the patient in bed, as many French and German physicians had done. It was better to give cautiously a systematic muscular training, with special reference to the heart. Albuminuria rose during the first few days or weeks of such treatment and then diminished again. It was preferable not to undergo the training in muscular exercise at home; better results were obtained at hospitals and health resorts. A fourth question was the treatment of the dangerous and frequent complication of obesity. Care should be taken not to reduce obesity too rapidly in cases of chronic renal disease. A healthy person might lose from four to six kilos in a month; when chronic renal disease was present four months should be allowed for the same loss of weight. Professor von Noorden referred to the importance of not checking the diarrhœa in uræmia, and mentioned that he had found by experiment that the greatest amount of nitrogen excreted by the skin in one day was three grammes, and by the bowel eight grammes.

Sir JOHN MOORE (Dublin) stated that deaths from chronic renal disease were common in Dublin. Chronic parenchymatous was more frequent than chronic interstitial nephritis. Calculous pyelitis had become much less common since the city had had an abundant soft water-supply from the Vartry river. He regarded the lungs as an important path of elimination and therefore open-air treatment was as important in chronic renal disease as in pulmonary tuberculosis. Uræmic coma was often averted by giving 20 grains of benzoate of soda. He had tried with unsatisfactory results the method of treatment lately recommended by Professor Renaut of Lyons, which consisted in administering macerated fresh pork kidneys.

Professor JAMES TYSON (Pennsylvania) agreed with Professor von Noorden that red and white meats were equally suitable in chronic renal disease and that water in excess was dangerous. Morphine was in most cases unsuitable but it might be given without danger in uræmic convulsions occurring in a case of chronic parenchymatous but not in interstitial nephritis. Methylene blue was eliminated in parenchymatous but not in interstitial nephritis and the same might probably be true of morphine. He quoted a case of parenchymatous nephritis illustrating his belief that decapsulation prolonged life but did not cure the disease.

Sir WILLIAM BROADBENT (London) regarded water as of considerable use for flushing the kidneys, especially when taken apart from meals. The progress of a case of chronic renal disease could not be judged by the amount of albumin; the specific gravity was much more important. Mild repeated doses of mercury had more effect in reducing arterial tension than salines. The worst symptoms of uræmia were dependent not upon poisons but upon arterial tension. Uræmic convulsions were of circulatory origin. He referred to a case of convulsions which in his view was due not to renal disease but to high arterial tension in which bleeding was followed by complete recovery and non-recurrence. The hot-air bath required considerable discussion, for they might determine convulsions by weakening the heart.

Professor ROBERT SAUNDBY (Birmingham) quoted several cases of great interest in illustration of the longevity of some cases suffering from renal disease. One was a case of a young man who had been previously seen by the late Sir George Johnson and warned to avoid athletics; he, however, persevered in outdoor sports and was seen by Professor Saundby 20 years later when he had cardiac hypertrophy, hard radials, a considerable amount of albumin, and some tube-casts in the urine. Professor Saundby had seen cases of nephritis during pregnancy accompanied by albuminuric retinitis which had completely recovered excepting from the eye symptoms.

Dr. SAMUEL WEST (London), addressing himself in the first place to the question of diet, remarked that in acute nephritis it was usual to place the patient upon a milk diet,

and rightly so, considering that it was mainly by the kidneys that effete nitrogenous products were eliminated; but during convalescence milk was not the best food for adults, their nutrition suffered, and the advantage of a change from milk to a more varied and liberal diet was a matter of daily experience. With granular kidney the case was somewhat different and these patients, in his experience, never throve upon a purely milk diet. The amount of albuminuria could never be taken as the guide to the diet required, excepting perhaps that where much albumin was present in the urine, as little albumin as possible should be given in the food. Turning to the use of drugs, digitalis was useful when the tension was low and antimony when it was high. In chronic parenchymatous nephritis the tension was almost always low and in this condition digitalis was the stock remedy because of its action on the heart as well as on the arteries. The normal tension in granular kidney was raised, but it might vary in either direction, the high tension being also either further raised or even becoming low, and treatment must be adopted accordingly. Antimony was not a good remedy in granular kidney for it produced much depression. Of the other drugs which reduced tension the most important were the nitrites and after them pilocarpine. Chronic uræmia consisted of the cachexia which developed in chronic renal disease and it was just such a general deterioration of health as the want of an internal secretion might produce; it was for this especially that renal extracts had been given. Acute uræmia, acute renal toxæmia, was a very different condition. It was due to some internally toxic substance circulating in the blood and a rational method of treatment would seem to be abstraction of blood associated or not with intravenous saline injection. Another method of more promise was the saturation of the blood with oxygen with the object of oxidising these venomous substances and thereby diminishing or removing their toxicity.

Dr. J. FINLAYSON (Glasgow) endorsed the remarks of previous speakers on the advisability of treating chronic renal affections on a totally different plan from that pursued in acute nephritis. Rest in bed and strict milk diet were not advisable in chronic cases.

Dr. J. ROSE BRADFORD (London) disagreed with the view that the amount of albumin lost was of no importance. As much albumin could be lost in a day as was contained in two pints of milk. He agreed, however, that the specific gravity was a better indication of the progress of the disease. A milk diet was advisable for chronic renal disease, but only in those cases which did not lose weight while taking it. Morphine was useful in certain cases, especially with dyspnœa, and it was inadvisable in cases with dropsy, but no definite rules could be laid down as to its use. He declared that there was no evidence to show that the kidney had any internal secretion. Venesection, followed by transfusion, was in some circumstances a valuable means of treating uræmia.

Dr. J. BARR (Liverpool) confirmed the remarks made by Professor Saundby as to the longevity of cases with chronic interstitial nephritis, and Dr. DAVID NEWMAN (Glasgow) described a method of venesection in nephritis.

SURGERY.

WEDNESDAY, JULY 27TH.

Introductory Remarks by the President.

Mr. H. P. SYMONDS presided and in opening the meeting made a few remarks on the subject proposed for discussion. He said that those who were only acquainted with modern surgery could not appreciate the condition of things before the introduction of antiseptic surgery. He himself had commenced the study of medicine in 1869 when, he might say, such a thing as primary union was never seen. He had also had the opportunity of seeing the result of wounds and operations in the Franco-Prussian war, when the mortality from amputations was exceedingly great and septic troubles of all kinds were the rule. All this had been changed by the methods of Lister. It was true that at first the technique was cumbersome and the details were many but there was one countervailing benefit; as the method was but little known the surgeon had to attend to all the details himself and thus were obtained the very excellent results which the new method gave at once. On one other point he wished to express an opinion; he thought that all surgical cases should, as far as possible, be treated in the open air; a method already employed in tuberculosis but applicable equally well to many other conditions. The most recent addition to the prevention of sepsis after operations was originally suggested by Mikulicz who advised the hypodermic injection of nuclein and other substances to set up a hyperleucocytosis, by which the resistance of the tissues was greatly increased. That surgeon was best fitted for the practice of surgery who had had a bacteriological training.

A discussion on

Asepsis and Antisepsis

was opened by Mr. F. F. BURGHARD, in the unavoidable absence of Mr. W. Watson Cheyne. He commenced by saying that all surgeons were agreed that a wound made by a surgeon into a non-septic part should be free from germs, that is, "aseptic," but the method by which this aseptic condition should be attained was the cause of much discussion but this difference of opinion could not apply to cases which were already septic when the surgeon operated. He continued: The standard by which the results of operations are judged is now very much higher than it was for some years after the introduction of the antiseptic method of Lister. Formerly a surgeon was satisfied with his results even though a little pus formed in a fair proportion of his cases but now even the slightest formation of pus is sufficient to condemn a wound as septic. Others say there should be no redness or swelling around a wound. Others are even more particular, for they insist on a wound and the surrounding parts proving sterile when examined by bacteriological culture tests. There are three channels by which infection can reach a wound. In the first place germs can enter a wound by the instruments employed. In the second place they can come from the skin of the patient or the hands of the surgeon or of his assistants. As a rule, true pathogenic bacteria do not reside in healthy skin; there are numerous germs present but they are usually harmless; still the skin is a fertile source of infection. The third channel by which micro-organisms can reach a wound is the air. Those who advocate what they call a pure "aseptic" surgery are inclined to minimise the dangers of infection by the air, but a very little experimentation with Petrie dishes exposed in the neighbourhood of an operation will show that many micro-organisms will settle during the time an operation is proceeding, it is true that most of these are non-pathogenic, but there is always the risk that pathogenic organisms may thus gain access to the wound and this danger should be guarded against. There are two methods by which micro-organisms can be destroyed—heat and antiseptics. Heat can be employed in three ways: first, by hot air, but this method needs expensive and troublesome apparatus and is therefore little used. Secondly, by boiling in water; this method is much employed but for thorough sterilisation boiling for half an hour is required and, though this is possible for instruments put out for an operation, it is not possible if an instrument is suddenly required in the middle of an operation. The third method is by superheated steam, but in Mr. Burghard's opinion this is suitable only for trays and basins. With regard to the skin, heat cannot be employed and therefore recourse must be had to the use of chemicals, and even those who sterilise the instruments and dressings by means of heat employ antiseptics for the skin. With regard to the tissues in a wound no one favours the employment of strong antiseptics, but the use of dilute antiseptics in a wound can do no harm. He employs heat to sterilise instruments as a rule, but when an instrument is required during an operation it is dipped for five minutes in liquefied carbolic acid and then it is placed like the other instruments in a 1 in 20 carbolic acid solution. The paper ended with various details as to the preparation of instruments, the disinfection of the skin, the use of sponges, the preparation of catgut, and towels.

Mr. C. A. LEEDHAM-GREEN (Birmingham), in continuation of the discussion, read a paper on the Sterilisation of the Hands, in which he described some experiments made to determine the relative value of various methods employed by which he had arrived at the following conclusions. That even after the most prolonged and energetic washing of the hands in soap and hot water it is not possible materially to diminish the number of microbes on them and that the form of soap employed causes no real difference; that, however prolonged the washing is, nothing is really gained; neither is there much value in using soft soap, turpentine, benzol, xylol, or aqueous solutions of carbolic acid, lysol, perchloride, or biniodide of mercury. Kelly's method of applying a saturated solution of permanganate of potash followed by a solution of

oxalic acid gives wholly inadequate results. Soaps containing biniodide of mercury or lysol are practically valueless for cleansing the hands. Alcohol far surpasses all other agents for cleansing the hands but it should be employed for four or five minutes, especially when in a 70 per cent. solution. It is essential that the hands should be smooth. The best results were obtained by the following methods: (*a*) the hands were first scrubbed for five minutes with soap and very hot water (about 50° C.); (*b*) then rubbed with methylated spirit for three minutes; (*c*) then scrubbed for a minute or two with 70 per cent. sublimate alcohol (1 in 1000); and (*d*) finally rubbed until dry and polished with a sterile cloth. As no method of cleansing the hands guarantees sterility it is desirable that impermeable gloves should be worn when the nature of the operation will permit, whether the wound be aseptic or not.

Mr. H. GILBERT BARLING (Birmingham) said that he believed there was practical agreement as to Lister's teaching with regard to wound diseases, but there were divergencies of opinion as to the importance of the various sources from which infection was derived. Some of the sources of danger might easily be provided against, for heat was an absolutely efficient steriliser when it could be used; when it could not be used the less reliable method of chemical disinfection had to be adopted. That chemical disinfection was unreliable could be shown by the fact that much commercial "sterilised" catgut will infect culture tubes. Complete disinfection of the skin of the operator and of the patient was almost impossible, for even if the surface of the skin at the commencement of the operation was sterile, yet during the course of the operation micro-organisms from the deeper layers of the epidermis worked to the surface. Air infection could not be prevented, but one of the most important points in preventing infection through the air was to take care that the air was as still as possible, and that no dusting or sweeping was done before the operation. No wound was absolutely aseptic, for if the surface of a wound was tested by cultures immediately before it was closed infection would always be found to be present. The tissues destroyed micro-organisms to a certain extent and it was better to let them exercise this power than to employ strong antiseptics in the wound and thus reduce greatly the resistance of the tissues. Finally, it was important to do as little damage as possible to the edges of the wound and to keep it as dry as possible.

Mr. H. J. STILES (Edinburgh) considered that the treatment of wounds depended not so much on the method employed as on the care with which it was carried out. The preparation of the skin might easily be overdone. He prepared the skin of the patient the day before, then applied a dry dressing, and then again disinfected it immediately before the operation. As to the dressings for the wound, he often used none but merely put on some iodoform from cumol. He had employed this in 100 cases of hernia in children with excellent results. When a wound was not to be disturbed for two or three weeks he thought it well to use an antiseptic dressing.

Mr. K. W. MONSARRAT (Liverpool) thought that a surgeon should always test his methods bacteriologically. The method used for the patient's skin had to vary with the region operated on, but an alcoholic solution of the biniodide was very useful. He considered that gloves were essential, for only by the use of gloves could a surgeon guarantee that his hand did not infect the wound. After the operation it was well to wash out the wound with sterilised water.

Mr. G. G. HAMILTON (Liverpool) gave a list of a year's work. Out of 154 operation cases only six did not heal by first intention. He thought it desirable to do without assistants so far as possible.

Mr. J. P. BUSH (Bristol) said that he had given up Kelly's method of hand disinfection and had gone back to immersion of the hands in a solution of carbolic acid or perchloride of mercury. Dressings were of very little importance.

Professor RODMAN (Philadelphia) said that by no method was it possible to sterilise the hands, except perhaps by the use of chlorinated lime and water followed by carbonate of sodium, but this was too severe for everyone except those with very thick skins. It was best for the surgeon to wear rubber gloves. Washing for five to ten minutes was of great value in cleansing the skin.

Mr. C. W. CATHCART (Edinburgh) thought it of great importance for those engaged in teaching to practise such a method as could be followed out by their students. His house surgeon who assisted him wore gloves, but rarely put his hands into the wound.

Sir WILLIAM MACEWEN (Glasgow) said that he practised aseptic surgery, but the skin was cleansed with soap and carbolic acid solution on two or three occasions. The surgeon's hands were periodically tested bacteriologically, and he required that all his assistants should steep their hands for two minutes in a 1 in 20 solution of carbolic acid. He only used gloves for septic wounds.

The discussion was continued by Mr. H. DAVIES (Greenwich), Mr. J. WARD COUSINS (Portsmouth), Mr. A. B. MITCHELL (Belfast), Mr. W. A. MEREDITH (London), Dr. J. LAURIE, and Dr. W. T. BROOK FOX (Blyth).

Dr. G. H. EDINGTON (Glasgow) reada paper on Median Cysts of the Neck. It was based on several cases observed by him. All these cysts were developed from the thyroglossal tract as first described by His. He gave details of some of his cases and pointed out that these cysts might appear superficially to the deep fascia.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

The section met in the Pathological Department, University Museum. The President, Dr. JAMES RITCHIE (reader in pathology, University of Oxford), whose address was practically the opening contribution to the discussion on Immunity, briefly reviewed the present-day theories on the subject, differentiating established facts, laying stress on the complexity of the problems needing elucidation, and indicating the trend of the most recent work.

Dr. W. BULLOCH (London) followed with a paper on the Cellular Aspects of Immunity.

Dr. GEORGES DREYER (Copenhagen) and Dr. A. J. JEX-BLAKE (Oxford) detailed their experiments on Agglutinins in Relation to Immunity, and Dr. MADSEN (Copenhagen), in his paper on the Neutralisation of Lysins, pointed out the applications of the methods of physical chemistry to the elucidation of these biological reactions.

Dr. C. J. MARTIN (Lister Institute) and Dr. NOGOUCHI dealt with Snake Venom in Relation to Immunity, the former discussing the broad general principles brought out by the study of this branch of the subject; the latter dealing with the specific results obtained by the therapeutic use of various antivenins.

Dr. M. A. RUFFER (Alexandria), in a paper on Hæmolytic and Hæmosozic Sera, dealt with the preparation and characters of these substances, after which the section adjourned.

On resuming, in the course of a discussion on Immunity, Professor MUIR (Glasgow) described his experiments on the Nature of Hæmolysis and was followed by Dr. A. E. WRIGHT (London) on Opsinines and their Relation to Immunity, in which he explained the nature and action of these substances.

PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 27TH.

The meeting of the section was held in the Morphology Lecture Room of the University.

The Presidential Address was delivered by Dr. CHARLES A. MERCIER, the subject of the address being Criminal Responsibility and Degeneracy. A lengthy discussion followed the reading of this paper and among those who took part in it were Mr. A. DOUGLAS COWBURN, Dr. T. CLAYE SHAW, Dr. G. H. SAVAGE, Dr. DAVID YELLOWLEES, Dr. G. F. BLANDFORD, Dr. T. B. HYSLOP, Mr. CONOLLY NORMAN, Dr. ROBERT JONES, Dr. ERNEST W. WHITE, and Dr. G. E. SHUTTLEWORTH, after which the PRESIDENT replied. Letters contributory to the subject matter of the discussion were sent by Sir HERBERT STEPHEN and Mr. HAVELOCK ELLIS, which were, in the absence of the writers, read by the SECRETARY.

A lantern and microscopical demonstration on degenerative lesions of the posterior columns of the cord in general paralysis with remarks on the point of origin of tabes dorsalis was given by Dr. DAVID ORR and Dr. R. G. ROWS. The view was maintained that the local vulnerability of certain points in the posterior root fibres of the spinal cord was due to anatomical conditions of the nerve-sheaths, as demonstrated on the screen. An explanation of the pathogenesis of tabes was then given, based on the facts of the vulnerability referred to. This concluded the proceedings of the first day.

PHYSIOLOGY.

WEDNESDAY, JULY 27TH.

This section met in the Physiological Laboratory under the chairmanship of Professor FRANCIS GOTCH. Dr. E. I. SPRIGGS gave an account of the work done by Dr. A. P. Beddard and by himself in connexion with the Metabolism of Diabetes, Professor W. H. THOMPSON and Dr. RAMSDEN joining in the discussion which followed.

Dr. W. L. BRADDON described and exhibited Structures in Red Blood Corpuscles Stained by Alkaline Solutions of Methylene Blue when the blood film had not been previously dried.

Dr. R. KENNEDY communicated his views and further observations on the Histological Changes occurring in Ununited Divided Nerves, his remarks giving rise to an interesting discussion by Professor GOTCH, Professor WESLEY MILLS, Dr. W. B. WARRINGTON, and Professor THOMPSON.

Dr. WARRINGTON and Dr. F. GRIFFITH gave an account of their work upon the Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution.

Dr. H. M. VERNON read a paper on the Protective Value of Proteids and their Decomposition Products on Trypsin exposed to Dilute Alkaline Solutions.

ANATOMY.

WEDNESDAY, JULY 27TH.

This Section met in the Lecture Theatre of the Department of Human Anatomy, Professor A. THOMSON, the President, being in the chair. Dr. C. J. PATTEN communicated a paper on a New Method of Mounting Anatomical Preparations for Museum Purposes. Dr. G. H. BRYCE read a paper on the Origin of Embryonic Leucocytes and Professor ROBINSON and Professor F. KEIBEL joined in the discussion. The rest of the sitting was devoted to a discussion on Giants and Dwarfs which, after being opened by Professor D. J. CUNNINGHAM, was continued by Professor B. C. A. WINDLE, Mr. HASTINGS GILFORD, Professor A. DIXON, Dr. PETER THOMPSON, Dr. G. A. GIBSON, Dr. GLADSTONE, Dr. PATTEN, Dr. GUSTAV MANN, and Professor SYMINGTON.

OPHTHALMOLOGY.

WEDNESDAY, JULY 27TH.

The sections met in Keble College under the presidency of Mr. R. W. DOYNE (Oxford), who offered a special welcome to the many visitors from America, France, and Germany who proposed to join in the work of the section.

A discussion on Retro-bulbar Neuritis was opened by Mr. R. MARCUS GUNN (London), who was followed by Mr. G. A. BERRY (Edinburgh), Professor UHTHOFF (Breslau), Mr. C. HIGGENS (London), Mr. F. RICHARDSON CROSS (Bristol), Professor OLIVER (Philadelphia), Dr. A. H. GRIFFITH (Manchester), Mr. E. NETTLESHIP (London), and Dr. MILLER. Mr. GUNN replied.

An interesting paper was read by Professor POULTON, F.R.S., on Conclusions as to Vision of Birds based upon a Consideration of Mimetic Colour and Pattern in Insects. A paper on the Maturation and Extraction of Senile Cataract was read by Mr. M. M. MCHARDY (London) and discussed by Mr. HIGGENS, Dr. GRIFFITHS, Dr. J. TATHAM THOMPSON (Cardiff), Dr. K. A. GROSSMANN (Liverpool), and Dr. F. A. THOMAS (Swansea).

Dr. GROSSMANN read a paper on Cases of Astigmatism with Variable Axes, which was discussed by Mr. BEHRY and Professor BULL (Paris), and after a reply from Dr. GROSSMANN the section adjourned.

On resuming several demonstrations of specimens, drawings, and instruments were given in the special museum of the society.

DERMATOLOGY.

WEDNESDAY, JULY 27TH.

This section was presided over by Dr. T. COLCOTT FOX.

Dr. A. DOUGLAS HEATH read a paper on Acne Keloid and demonstrated the case. Dr. FOX, Dr. H. A. G. BROOKE, Dr. GILCHRIST (Baltimore), and Dr. J. M. H. MACLEOD joined in the discussion.

Dr. W. T. FREEMAN showed a case of Leucokeratosis Buccalis and a case of Congenital Pemphigus, and Dr. H. RADCLIFFE CROCKER, Dr. GILCHRIST, Mr. G. PERNET, and Dr. F. LESLIE PHILLIPS spoke in the subsequent discussion.

Mr. MALCOLM MORRIS opened a discussion on Pruritis Ani, and Dr. FOX, Dr. CROCKER, Miss E. L. WALKER DUNBAR, Dr. FREEMAN, Dr. M. B. HARTZELL, Dr. NORMAN WALKER, Mr. PERNET, Dr. HARRISON, and Dr. GILCHRIST spoke.

Dr. HARTZELL read a paper on Benign Cystic Epithelioma, and Dr. BROOKE and Dr. GILCHRIST discussed the paper.

Mr. PERNET read a paper on Bacillus Pyocyaneus and Pemphigus Vegetans.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, JULY 27TH.

This section met in the class room in the museum under the presidency of Mr. J. CHARTERS SYMONDS (London), who, after welcoming the visitors, gave a brief address.

A discussion on

The Treatment of Non-Suppurative Disease of the Middle Ear

was opened by Dr. URBAN PRITCHARD (London) and Dr. THOMAS BARR (Glasgow.)

The discussion was continued by Dr. ADOLPH BRONNER (Bradford), Dr. MARCEL NATIER (Paris), Dr. J. WALKER DOWNIE (Glasgow), Mr. F. MARSH (Birmingham), Dr. WILLIAM MILLIGAN (Manchester), Dr. L. H. PEGLER (London), Dr. B. H. SCANES SPICER (London), Dr. H. SMURTHWAITE (Newcastle), Mr. E. WAGGETT (London), Dr. CECIL E. SHAW (Belfast), Mr. C. H. FAGGE (London), Mr. W. HILL (London), Dr. A. J. BRADY (Sydney, N.S.W.), Dr. J. E. NEUCOMB (New York), and Dr. W. JOBSON HORNE (London).—The PRESIDENT summed up the discussion and the openers replied.

The translation of a paper contributed by Professor OUODI of Budapest on the Disturbances of Vision and Development of Blindness of Nasal Origin induced by Diseases of the Posterior Accessory Sinuses was read by Dr. HORNE.

TROPICAL DISEASES.

WEDNESDAY, JULY 27TH.

The President, Dr. ALEXANDER CROMBIE delivered an introductory address entitled

"*The Fallacy of Finality*,"

in which he pointed out that a large proportion of the febrile attacks of hot climates must still be included in the term "febricula" and "simple continued fevers," and that the evidence that they were medical was inadmissible.

Colonel DAVID BRUCE, R.A.M.C., opened a discussion on "Trypanosomiasis" in which he contended that the trypanosoma Gambiense was undoubtedly the cause of trypanosomal fever and of sleeping sickness, and that the glossina palpalis was the carrier of the disease. The discussion was continued by Dr. D. N. NABARRO, Dr. C. CHRISTY, Sir PATRICK MANSON, and Dr. LOUIS SAMBON.

A paper on Trypanosomiasis and its Relations to Congo Sleeping Sickness (second progress report of the Liverpool School of Tropical Medicine Expedition to the Congo in 1903) was communicated by Dr. CHRISTY, Dr. J. E. DUTTON, and Dr. J. TODD.

A paper entitled "A New Trematode of Man" (Amphistoneum Watsoni) was communicated by Mr. H. F. CONYNGHAM, demonstrator at the London School of Tropical Medicine.

"The Treatment of Snake Bites" was the title of a paper sent by Captain LEONARD ROGERS, I.M.S., acting professor of pathology, Medical College, Calcutta.

Mr. ERNEST E. AUSTEN, Zoological Department, British Museum, communicated Supplementary Notes on the Tsetse Flies (Genus Glossina, Wiedemann).

Papers on Floor Maggots met with in Houses on the Congo and on Cerebro-spinal Fluid in Sleeping Sickness (Trypanosomiasis) were communicated by Dr. CHRISTY.

Dr. E. ANDERSON of Paris and Mr. T. J. TONKIN, joined in the discussion.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 27TH.

Surgeon-General A. FREDERICK BRADSHAW (the President), in a short introductory address, indicated the direction of the labours of the section.

Major E. C. FREEMAN, R.A.M.C., then read a paper

on the Sanitation of Camps and this was followed by a communication on Sanitation in Volunteer Camps, contributed by Surgeon-Lieutenant-Colonel P. B. GILES, A.M.R. A paper by Staff-Surgeon J. FALCONER HALL, R.N., on the Present Dietary on Board a Man-of-War, was read and in the debate which followed the question of sanitation in connexion with the papers contributed was discussed.

A report by Major J. F. DONEGAN, R.A.M.C., on the Duties of a Medical Officer with a Regimental Unit in the Field was read; also a paper by Lieutenant-Colonel A. M. DAVIES, R.A.M.C., on the Sterilisation of Infective Discharges and Utensils on Field Service.

A paper on the Recruiting Problem, by Surgeon-Major W. C. BEEVOR, followed, and was fully discussed by Deputy-Inspector-General T. J. PRESTON, R.N., Surgeon-Major G. A. HUTTON, Fleet-Surgeon J. LLOYD THOMAS, R.N., and Major R. C. LEVER, R.A.M.C.

DENTAL SURGERY.

WEDNESDAY, JULY 27TH.

The meeting of this section was held in the Pharmacological Department under the presidency of Mr. E. A. BEVERS. The PRESIDENT read a short address. A discussion took place on Oral Sepsis, the subject being introduced by the following papers: Oral Sepsis as Related to General Surgery, by Mr. RICKMAN J. GODLEE; Oral Sepsis in its Relation to General Medicine, by Dr. W. HUNTER; the Pathology of Oral Sepsis, by Mr. KENNETH W. GOADBY. The following took part in the discussion: Dr. DALTON, Dr. STCLAIR THOMPSON, Dr. H. TILLEY, Professor J. ARKÓRY (Budapest), Mr. NORMAN BENNETT, Mr. J. G. TURNER, Mr. HERN, and Mr. E. LLOYD-WILLIAMS.

THE ANNUAL EXHIBITION.

OXFORD has provided excellent facilities for the exhibition of foods, drugs, and appliances of interest to the medical profession. The beautiful university city was sure to draw a large attendance and this fact was not lost sight of by intending exhibitors. As a result the exhibition was on a larger scale than in previous years and the number of visitors who attended must have been gratifying to all concerned. The accommodation placed at the disposal of the exhibitors was ample and every opportunity was offered for making the display attractive in the spacious and beautiful rooms situated on the first floor of the Examination Schools in the High-street. In the same picturesque building were the reception-room and the room in which the general meetings were held, so that the fact of an exhibition taking place could hardly escape the visitor, even though he were bent merely upon the discussion of the affairs of the Association or interested mainly in the social side of the meeting.

In regard to the exhibits, there was a noticeable falling off in one class while there was a decided increase in another. The sections more fully illustrated than before perhaps were those which we have hitherto included under the headings of "surgical instruments" and "sanitary and hospital appliances." Special foods were represented on much the same scale as in previous years but drugs, synthetic remedies and new methods of administration were not so prominent a feature. There were, however, many excellent displays typifying pharmaceutical elegance and skill. Electro-therapeutic apparatus attracted a good deal of interest and there was also a fair representation of scientific apparatus. Whilst adhering mainly to the classification adopted in former years we may depart from it by placing the sections in a slightly different order, giving those precedence which appeared to be more in evidence than has hitherto been the case. We propose therefore to deal with the sections in the following order. (1) Drugs; (2) Surgical Instruments and Appliances; (3) Sanitary Appliances, Disinfectants, &c.; (4) Foods and Food Products; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Miscellaneous.

I.—DRUGS.

Considerable attention has been paid to the preparation of suprarenal extracts, almost every manufacturing pharmaceutical chemist exhibiting special specimens of this powerful hæmostatic. In particular, Messrs. Parke, Davis, and Co., of 111, Queen Victoria-street, London, E.C., showed specimens of the hæmostatic principle in the form of adrenalin chloride, one part of which in 10,000 parts of water is stated to blanch the conjunctiva in from 30 to 60 seconds. The difficulty of making aqueous solutions has been overcome by the use of the chloride. A recent application of adrenalin chloride applied in the form of spray is its use in hay fever. We have already mentioned in our analytical columns acetozone, or benzoyl-acetyl-peroxide, which proves to be a powerful germicide, equal in this respect to 1 per 1000 mercuric chloride solution, whilst it may be administered internally without harm. Amongst other products on this stall we noticed digitalin, which is described as an aseptic, non-alcoholic, non-irritating, permanent solution of digitalis standardised physiologically. The exhibit also included a series of lantern-slides illustrating the preparation of serum, the physiological testing of drugs, and a series of charts illustrating the effect of adrenalin and digitalin on heart and blood pressure. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, E.C., showed some of their fine specimens of pharmaceutical products. Amongst these may be mentioned aristol, an iodine thymol derivative, described as a "cicatrisant" for burns, ulcers, and purulent discharges; citarin which has been used in the treatment of gout and as an analgesic in cases of rheumatism; helmitol, a new urinary antiseptic liberating formaldehyde both in alkaline and acid urines; mesotan, a derivative of salicylic acid and a substitute for winter green oil but without, it is said, the disagreeable properties of the latter; and lastly, veronal or malonyl urea, a new hypnotic which is said to induce sleep without harmful effects. One of the best examples of pharmaceutical display was that of Messrs. Brady and Martin, Limited, of Newcastle-upon-Tyne. Their preparations included ergotinol, a standard preparation of ergot which has been used with consistent results in gynæcological practice; capsules of ammoniated quinine, Easton's syrup, and several excellent liquors. Messrs. A. and M. Zimmerman of 3, Lloyd's-avenue, London, E.C., exhibited some interesting synthetics, amongst which may be mentioned exodin (Schering), a tasteless and odourless aperient causing no disturbance to the stomach; urotropine, a urinary antiseptic; beta-eucaine, which is chemically identical with cocaine but possessing advantages compared with that alkaloid in anæsthetic practice. This exhibit included sublamin, a powerful bactericide useful in particular for disinfecting the skin and mucous membrane. There were also other preparations illustrating "Schering's modern therapeutics." The stall of Mr. Frank A. Rogers of 327, Oxford-street, London, W., was chiefly occupied by a very complete set of medical sprays and atomisers simple in design and effective. The exhibit included also some pharmaceutical preparations and hypodermules of suprarenal gland solution. The Ferroleum Company, Limited, of 86, Clerkenwell-road, London, E.C., exhibited their specialty ferroleum, which is based on an excellent formula, including cod-liver oil, phosphate of iron, phosphorus, and glycerine. The point about the preparation is that the ingredients are completely emulsified. Purgen was the chief exhibit of Messrs. H. and T. Kirby and Co., Limited, of 14, Newman-street, London, W. Purgen is described as a non-irritating but effective aperient. It is said to have a constitution allied to the purgative principle of well-known vegetable extracts. The exhibit included some useful compressed tablets of drugs. Messrs. Andrus and Andrus of 46, Holborn Viaduct, London, E.C., drew the attention of the visitors to "hemaboloids" described as "a rational blood enricher and tissue reconstructive." Its claims as a real and effectual hematinic are based upon the fact that it contains iron as it exists in organic combination in vegetable food stuffs. It is further prepared with bone-marrow extract, beef peptone, and nuclein. Clinical observations are given which record the increase in the percentage of hæmoglobin of the blood after the administration of hæmoboloids. Beside this preparation were specimens of formolyptol, a pleasant, non-irritating, and non-poisonous bactericide. We have already pointed out the advantages of "antiphlogistine" which is in reality a scientific cataplasm inducing circulation of the blood in an affected or diseased part. It is healing and soothing whilst antiseptic. Antiphlogistine has yielded good results in inflammatory conditions. The preparation was shown by the Denver Chemical Manufacturing Company of 110, Cheapside, London, E.C. Certain pharmaceutical preparations for which originality may be claimed were artistically displayed on the stall of Messrs. C. J. Hewlett and Son, of 35 to 42, Charlotte-street, London, E.C. Amongst

these may be mentioned mist. pepsinæ co. cum bismutho and mist. tussi rub. conc. Amongst synthetic remedies were veronal, a new hypnotic, while an interesting combination is adrenal-eucaine used in the form of injection for deep-seated operations without incurring hæmorrhage and pain. Messrs. Arthur and Co., of Ogle-street, London, W., exhibit was devoted chiefly to bromide of gold preparations. Messrs. Duncan, Flockhart, and Co., of Edinburgh and London, had a very interesting exhibit, amongst which were their pure chloroform, ether, and ethyl-chloride for inhalation purposes. The exhibit included a specially pure soap known as baumol and some compressed tablets of drugs and certain antiseptic preparations of merit. The Angier Chemical Co., Limited, of 32, Snow-hill, London, E.C., exhibited their emulsion of petroleum with hypophosphites. The emulsion shows under the microscope a perfectly uniform field. Mr. W. Martindale, of 10, New Cavendish-street, London, W., presented an excellent assortment of pharmaceutical preparations to view. Beside hypodermic tablets, capsules, inhalers, and effervescent preparations there were analytical apparatus and the germicide—a compound of formaldehyde and soap—known as lysoform. The Charles H. Phillips Chemical Company, of 14, Henrietta-street, Covent-garden, W.C., exhibited specimens of their milk of magnesia, cod-liver oil emulsion, and a phosphomuriate of quinine compound. We have had occasion before to point out the excellence of the milk of magnesia for the purpose of neutralising hyperacidity. Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C., exhibited some useful recent applications of the palatinoid and bi-palatinoid. The former is very useful for administering animal substances. They also showed a preparation known as renaglandin which is an aseptic solution of the active principle of the suprarenal gland. Messrs. Hedley and Co., of 92, Harrow-road, Leytonstone, exhibited pure ethyl chloride both for local and general anæsthetic purposes. Great care is taken by this firm to secure an absolutely pure and chemically permanent ethyl chloride. Solutions are also prepared by the firm containing pure ethyl chloride with cocaine, with carbolic acid and with iodoform. An inhaler was also exhibited as well as a special stopper for the ethyl chloride tube which provides against leakage and waste of the volatile chloride. Messrs. Cuxson, Gerrard, and Co., Limited, of Crown Buildings, Corporation-street, Birmingham, showed an interesting assortment of aseptic and antiseptic dressings and the exhibit included Gerrard's excellent and convenient apparatus for the estimation of sugar and urea in urine and Dr. Walker Hall's apparatus also for the estimation of purin bodies. A pretty and elegant display of drugs and fine pharmaceutical preparations was given by Wyleys, Limited, of Coventry. Amongst these should be mentioned "ruscol," an ointment compounded of bismuth and birch tar which has been found useful in eczema and other skin diseases. Amongst other preparations were heroin compounds, standard tinctures, and various antiseptics in pellet form. Somnoform was the subject of exhibit on the stall of Messrs. C. de Trey and Co., of 52, Shaftesbury-avenue, London, W. Somnoform contains 60 per cent. of chloride of ethyl, 35 per cent. of chloride of methyl, and 5 per cent. of bromide of ethyl. Heyden's pharmaceutical products were exhibited by Messrs. Burgoyne, Burbidges, and Co., of 12 and 16, Coleman-street, London, E.C. Amongst the preparations shown were a colloidal silver preparation; salit or salicylate of borneol, an external remedy for rheumatism; salocreol, a combination of salicylic acid and creosote used for the same purpose; and, lastly, calodal, a soluble albuminous preparation for subcutaneous, rectal, and normal nutrition.

II.—SURGICAL INSTRUMENTS AND APPLIANCES.

The first exhibit that met the eye of the visitor on approaching the exhibition was an admirable display of aseptic furniture for operation theatres and the wards of hospitals by Messrs. Down Brothers, Limited, of 21, St. Thomas's-street, London, S.E. The exhibit was typical of modern surgical appliances and requirements. At another stall the same firm exhibited a selection of surgical instruments amongst which were many of new design. The exhibit of Messrs. Allen and Hanbury, Limited, of 48, Wigmore-street, Cavendish-square, London, W., presented a good deal of interest to those concerned in modern surgery. A feature of the exhibit was the aseptic hospital furniture designed in phosphor-bronze, German silver, and enamelled steel. Phosphor-bronze in particular seems admirably suited for the purpose, as it is very hard, does not rust, has no white enamel to chip off, looks always bright and clean, and keeps its metallic lustre. The exhibit included an excellent assortment of surgical appliances and some clinical accessories. Messrs. Brady and Martin, Limited, of Newcastle-on-Tyne, had a well-arranged stall on which was an excellent selection of modern surgical instruments and appliances. There were likewise examples of Schimmelbusch's apparatus for sterilising dressings by steam and instruments by boiling. There was also a collection of scientific apparatus for analytical work connected with public health, both chemical and bacteriological. A good deal of interest was taken by surgeons, because of the up-to-date character of the surgical appliances shown, in the exhibit of Messrs. Arnold and Sons, of West Smithfield, London, E.C., which included various inhalers and several forms of sterilisers. A large selection, again, of forceps, nose, ear, mouth and throat instruments, and gynæcological appliances were submitted for inspection by the Holborn Surgical Instrument Company, Limited, of 26, Thavies-inn, Holborn-circus, London, E.C. Instruments adapted for special surgical work formed the feature of the stall of Messrs. Gardiner and Sons (32, Forrest-road, Edinburgh). Messrs. W. H. Bailey and Son, of 38, Oxford-street, London, exhibited chiefly examples of aseptic hospital furniture of their own design, amongst which was their special registered operation table. Amongst other things were a useful form of couch and an aseptic locker for hospitals, as well as several excellent sterilising appliances. Messrs. Mayer and Meltzer, of 71, Great Portland-street, London, W., showed a number of instruments of use in modern general surgery and also a selection of laryngological, rhinological, aural, and gynæcological instruments. There were besides excellent models of hospital furniture. Examples of all kinds of improvements in regard to general operating instruments were illustrated in the thoroughly representative exhibit of Messrs. John Weiss and Son, of 287, Oxford-street, London, W. The exhibit included some well-designed sterilisers. Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C., exhibited several examples of his ingenious "Repello" clinical thermometer. The mercury in this thermometer requires no shaking down, the column being reset by simply pressing the flattened bulb at the top end of the thermometer. Mr. F. Gustav Ernst, of 80 and 82, Charlotte-street, Fitzroy-square, London, W., exhibited an interesting assortment of orthopædic appliances and artificial limbs. The appliances included apparatus for spinal curvature, hip-joint, paralysis, genu valgum, flat-foot and hammer-toe. Appliances for the mechanical treatment of deformities of different types, including examples of artificial limbs, trusses, and belts, were the special subject of exhibit of Messrs. Salt and Son of 5, Cherry-street, Birmingham. The Hospitals and General Contracts Co., Limited, of 33, Mortimer-street, London, W., exhibited aseptic aluminium tables for operating theatres and hospital wards. The exhibit included a pocket steriliser, a universal portable steriliser, and an electric steriliser. Many visitors were glad of the opportunity of inspecting the Harcourt chloroform inhaler, several examples of which were exhibited by Messrs. John J. Griffin and Sons of 20, Sardinia-street, Lincoln's-inn-fields, London, W.C. This apparatus is designed to secure the administration of a known and accurate quantity of the anæsthetic. The strength of the dose can be accurately adjusted and the frequency as well as the strength of the respiration noted. Messrs. S. Maw, Son, and Sons, of 7 to 12, Aldersgate-street, London, E.C., had two stalls, at one of which was an admirable assortment of surgical instruments, while at the other were examples of aseptic hospital furniture, including operation tables, an improved instrument table, an instrument cabinet, and an improved dressing wagon. The well-known patent appliances for the lame of the O'Connor Extension Company of 2, Bloomsbury-street, London, W.C., were illustrated in some excellent examples, the exhibit including the Gunthorp appliances for weak or deformed feet and a new support and patent boot for flat foot. There were several exhibits of electro-therapeutic apparatus. Messrs. Harry W. Cox, Limited, of 9, 10, and 11, Cursitor-street, Chancery-lane, London, W.C., showed examples of their excellent induction coils and their record tube for x-ray work. In one case the tube is provided with a lead-glass shield to protect the operator from the influence of the rays. Examples of frequency apparatus were also shown.

The Marconi Wireless Telegraph Co., Limited, showed also x-ray apparatus suitable for hospital use. It need hardly be added that this company supply also high-frequency apparatus and accumulators. The Medical Supply Association, of 228, Gray's-inn-road, London, W.C., exhibited a new high-frequency apparatus for which they claimed certain advantages. The apparatus is stated to work directly from continuous or from alternating main currents and does not require induction coil or platinum, mercury, or other interrupter. The apparatus is designed by no less an authority on high-frequency currents than M. D'Arsonval, but some difficulty appeared to be experienced by the operators in getting the apparatus to work for demonstration purposes and it does not appear to be free from the drawbacks of many adjustments. Messrs. F. Davidson and Co. of 140, Great Portland-street, London, W., exhibited a number of ingenious appliances for ear, eye, nose, and throat examinations. Some excellent x-ray outfits were exhibited by Messrs. Isenthal and Co. of 85, Mortimer-street, Cavendish-square, London, W. There were also exhibited at this stall electric vibrators, continuous current transformers either for cautery or light, electric sterilisers, hot plates, and food warmers.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the Board in the subjects indicated at the quarterly meeting of the examiners:—

Anatomy and Physiology.—Edward Morison Adam, Charing Cross Hospital; Hugh Tuke Ashby, B.A. Camb., Cambridge University; Harold Percival Aubrey, L.D.S. Lond., Guy's Hospital; Walter Joseph Berne, London Hospital; Robert Nicholas William Biddulph, University College, Bristol; Raymon Glendour Bingham, St. Thomas's Hospital; Arthur Ellis Blythman and Frank Butler, Charing Cross Hospital; Charles Walter Gordon Bryan, St. Mary's Hospital; Ernest Patrick Carmody, St. Bartholomew's Hospital; Edmund Victor Connellan, University College, Bristol; Edward Leslie Councell, Liverpool University; George Herbert Curtis, Westminster Hospital; Campbell William De Morgan, St. Mary's Hospital; Gilbert Henry Dive, St. Bartholomew's Hospital; John Edwin Ellcome, St. Thomas's Hospital; Reginald Robert Elworthy and Edmund George Foote, Westminster Hospital; Arthur Alan Forty, Arthur Leslie Foster, and Frederick Holcombe Fuller, Guy's Hospital; Harold Gibson, London Hospital; Kenneth Farquharson Gordon, Middlesex Hospital and University College, New Zealand; Alfred Hanau, St. Bartholomew's Hospital; Reginald William Ironside, B.A. Camb., and Charles Edward Mellersh Jones, B.A. Camb., Cambridge University; Thomas Alfred Killby, St. Bartholomew's Hospital; Gordon Lev, Thomas Parry Lloyd, and Reginald Mugliston, London Hospital; Percy Nevian Giles Pedrick and James Thornton Smalley, Guy's Hospital; Charles Henry Lambert Petch, St. Thomas's Hospital; Albert Pfeiffer, Middlesex Hospital; Leslie St. Vincent Welsh, St. Bartholomew's Hospital; Philip Lechmere Stallard, B.A. Camb., Cambridge University; Thomas Gordon Starkey-Smith, William Francis Sutcliffe, Wilfred Percy Tindal-Atkinson, and Walter George Howard Masterman Verdon, St. Thomas's Hospital; Charles Frederick Strange, Henry Darby Thomas, and George Henry Watson, London Hospital; Tim Timothy, University College, Cardiff; St. John Alexander Molesworth Tolhurst and John Nuthall Watson, Guy's Hospital; Lancelot Craven Wilkinson, St. Bartholomew's Hospital; and Cecil Lennox Williamson, University College, Liverpool.

Anatomy.—Ernest Ward Lowry, St. Bartholomew's Hospital.

Physiology.—John William Heekes, Charing Cross Hospital; Darwin Mills Keith, Michigan University and St. Bartholomew's Hospital; and Francis Hone Lloyd Marson, Middlesex Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in July the following candidates passed in the subjects indicated:—

Surgery.—A. Anderson (Section I.) and W. H. A. Elliott (Sections I. and II.), Leeds; P. A. Hendley (Sections I. and II.), King's College and St. Mary's Hospitals; J. E. Jones, Bristol; C. Kellgren, (Section II.), Royal Free Hospital; and S. H. R. Welch (Section II.), Charing Cross Hospital.

Medicine.—A. A. Angelis (Sections I. and II.), Athens; L. F. Cope (Sections I. and II.), St. George's Hospital; A. H. Hughes, Bristol; C. Kellgren (Sections I. and II.), Royal Free Hospital; E. R. Neukirch, Copenhagen; J. W. Rollings, Charing Cross Hospital; R. W. Taylor (Sections I. and II.), Leeds; J. R. R. Trist (Section I.), St. Bartholomew's Hospital; E. E. Tucker (Sections I. and II.), Royal Free Hospital; and T. R. Waltenberg (Section II.), Manchester.

Forensic Medicine.—A. H. Hughes, Bristol; C. Kellgren, Royal Free Hospital; R. W. Taylor, Leeds; J. R. R. Trist, St. Bartholomew's Hospital; and A. Whitby, Dublin.

Midwifery.—H. A. Browning, Cambridge and St. George's Hospital; W. H. A. Elliott and A. G. Gamble, Leeds; C. S. Ormsby, St. George's Hospital; C. T. Pellow and A. F. Reardon, St. Thomas's Hospital; R. W. Taylor, Leeds; and W. V. P. Teague, London Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: L. F. Cope, C. Kellgren, and T. R. Waltenberg.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in the Faculty of Medicine in July the following candidates were successful:—

FINAL EXAMINATION.

Part I.—Herbert Ainscow, Frank Boothroyd, T. M. Bride, D. E. Core, and C. M. Craig, Manchester; J. S. Crawford and F. G. Dobson Leeds; W. R. Douglas, H. M. Fort, and William George, Manchester; S. R. Gloyne, G. H. Hustler, T. E. Lister, and Walter Longley, Leeds; J. D. Marshall, Robert Ollerenshaw, W. C. Parkes, and Ethel M. Phillips, Manchester; R. B. Radcliffe, Leeds; Joseph Rickards and G. H. B. Russell, Manchester; A. L. Walker, Leeds; Julia C. White, Manchester; Thomas Whitehead, Leeds; and S. R. Wilson, Manchester.

Part II.—J. W. Anderton and R. A. H. Atkinson, Manchester; F. P. H. Birtwhistle, *Alan Boyle, and W. E. Brierley, Leeds; *W. M. Calverley and Catherine Chisholm, Manchester; Edward Cundall and A. M. Deane, Leeds; J. P. Garlick and W. P. Grant, Manchester; F. W. M. Greaves, Leeds; *E. E. Hughes, Hamilton Irving, C. E. Lea, T. W. P. Leighton, J. T. R. MacGill, and Hector Mackenzie, Manchester; H. J. Macvean, Leeds; H. E. Moore, F. G. Pell-Ilderton, R. N. Porter, F. G. Ralphs, Frank Robinson, J. F. Smith, and *Philip Talbot, Manchester; *Herbert Tomlin, Leeds; T. W. Walker, F. J. Walton, S. H. West, W. D. Wilkins, and A. R. Wright, Manchester; and F. W. B. Young, Leeds.

* With honours.

SECOND EXAMINATION.

A. Anatomy and Physiology.—J. P. Bibby, Leeds; T. B. Dickinson, Manchester; V. C. Hackworth and W. T. Hessel, Leeds; C. G. Howlett, S. S. Mahamadi, W. P. Moffett, J. H. Nichol, F. R. Parakh, A. E. Quine, A. C. Turner, Jerry Whitehead, and N. R. Williamson, Manchester.

B.—Materia Medica and Pharmacy.—John Allen, J. W. Bride, G. W. Bury, and D. J. Dakeyne, Manchester; W. L. Dibb, Leeds; A. K. Eatock, J. A. Fairer, and Frederick Hall, Manchester; W. D. Hamilton, Leeds; Frank Hartley, Robert Lakin, J. L. Moir, Peter Moran, Wilfrid Nightingale, J. A. Parkes, and George Rainford, Manchester; G. S. Richardson, Leeds; Robert Robertson, Douglas Rodger, Elsie M. Royle, F. K. Smethurst, Vincent Southwell, J. V. Steward, T. W. Todd, G. B. Warburton, B. V. Ward, and Henry Whitehead, Manchester.

DIPLOMA IN PUBLIC HEALTH.

Part II.—J. R. Hutchinson, W. A. Newall, C. S. O'Neill, Isobel Tate, and C. C. Webb.

UNIVERSITY OF EDINBURGH.—The following degrees and certificate have been conferred:—

Doctor of Medicine.—Robert Edward Adamson, England, M.B., C.M., 1892 (*in absentiâ*); *Roland Thomas Graves Aickin, New Zealand, M.B., Ch.B., 1903; Harvey Baird, Scotland, M.B., Ch.B., 1900; Charles Stuart Brebner, England, M.B., Ch.B., 1898; George Alexander Brogden, England, M.B., Ch.B., 1899; James M'Culloch Leigh Brown, M.A., Scotland, M.B., Ch.B., 1900 (*in absentiâ*); *James Brownlee, Scotland, M.B., Ch.B., 1901; †Thomas Lowe-Bunting, England, M.B., C.M., 1899; †John Cameron, D.Sc., Scotland, M.B., Ch.B. (with second-class honours), 1898; *Henry George Carlisle, England, M.B., Ch.B., 1899; George Scott Carmichael, Scotland, M.B., Ch.B. (with first-class honours), 1900; *John Cecil Carr, England, M.B., Ch.B., 1899; *Archibald Francis Reignier Conder, Scotland, M.B., Ch.B., 1902; *Robert Wiseman Cunningham, Scotland, M.B., C.M., 1895; *Clarence Brian Dobell, England, M.B., C.M., 1893; Charles William Donald, Scotland, M.B., C.M., 1892; Alexander Douglas, M.A., England, M.B., C.M. (with second class honours), 1892; William Eadie, England, M.B., Ch.B., 1900; Samuel Charles Ellison, Ireland, M.B., Ch.B., 1902; David Findlay, Scotland, M.B., C.M., 1893; Alexander Dingwall Fordyce, Scotland, M.B., Ch.B., 1898; Charles Fraser, M.A., Scotland, M.B., Ch.B., 1900; James Davie Gilruth, M.A., Scotland, M.B., C.M., 1895; Robert Ashleigh Glegg, Scotland, M.B., Ch.B., 1901; David Dryburgh Gold, Scotland, M.B., C.M., 1896; St. Leger Hugh Gribben, New Zealand, M.B., Ch.B., 1899; Robert Alexander John Harper, Scotland, M.B., Ch.B. 1901; Percival John Hay, England, M.B., Ch.B., 1901; Thomas Fair Johnston, Scotland, M.B., C.M., 1896; *Robert King, Scotland, M.B., Ch.B., 1898; *Edward Stewart Lewer, England, M.B., C.M., 1893; George Robert Livingston, Scotland, M.B., C.M., 1895; Robert Murray Lyon, Scotland, M.B., C.M., 1891; Philip Norman Mackay Macdonald, New Zealand, M.B., Ch.B., 1899; James Leslie Marjoribanks, Scotland, M.B., C.M., 1896; John Kennedy Matheson, Scotland, M.B., Ch.B., 1902; *Kenmure Duncan Melville, Scotland, M.B., Ch.B., 1900; †Thomas Lewis Morgan, Wales, M.B., C.M., 1889; Donald Norman Watson Murray, New Zealand, M.B., Ch.B., 1902; Edward Fox Macleod Neave, Scotland, M.B., Ch.B., 1897; Thomas Matheson Ness, M.A., Scotland, M.B., C.M., 1897; *Horace Clulow Nixon, England, M.B., Ch.B., 1900; †William Hogg Prentice, M.A., Scotland, M.B., Ch.B. (with second-class honours), 1901; Robert Morison Rowe, M.A., Scotland, M.B., Ch.B. (with second-class honours), 1899; *Caleb Williams Saleeby, England, M.B., Ch.B. (with first-class honours), 1901; †Raoul Scheult, Trinidad, M.B., C.M., 1892 (*in absentiâ*); James Frederick Selkirk, Scotland, M.B., Ch.B., 1900; *Hugh Meredith Speirs, England, M.B., Ch.B., 1900; *Ernest George Best Starkie, Burmah, M.B., C.M., 1889; *Ian Struthers Stewart, Scotland, M.B., Ch.B., 1901; Evan Cambria Thomas, Wales, M.B., C.M., 1889; Noel Nathaniel Wade, Wales, M.B., Ch.B., 1901; *Douglas Chalmers Watson, Scotland, M.B., C.M., 1892; Arthur William Wilcox, England, M.B., C.M., 1889; Alfred Ernest Williams, England, M.B., C.M., 1896; Arthur Murray Wood, Scotland, M.B., Ch.B. (with first-class honours), 1900; *Thomas Wood, Scotland, M.B., C.M., 1883; *David Young, Scotland, M.B., Ch.B., 1901 (*in*

absentia); and John Campbell Young, B.Sc., Australia, M.B., C.M., 1894 (*in absentia*).

* Commended for their theses.
† Highly commended for their theses.
‡ Awarded gold medal for their theses.

Bachelor of Medicine and Master in Surgery.—Hugh Craigie Gibson, Scotland; and George Munro, England.

Bachelor of Medicine and Bachelor of Surgery.—Russell Gerald William Adams, New Zealand; David Irving Anderson, England; William Ward Anderson, England; James William Herbert Babington, Ireland; §Robert Balfour Barnetson, Scotland; William Purvis Beattie, Scotland; Douglas Bell, England; Lewis Hay Irving Bell, Scotland; James Bentley, Ireland; Alexander Robert Berrie, India; John Marthinus Beyers, Cape Colony; Arnold Samuel Longbotham Biggart, England; Dudley William Boswell, England; Frederick Thompson Bowerbank, England; §David Brown, Scotland; William Sanders Murdoch Brown, Scotland; §Hugh Clive Buckley, India; Vincent Theodore Carruthers, England; Mildred Margaret Lindsay Cathels, Scotland; §Robert Alexander Chambers, Ireland; Duncan Macdonald Cochrane Church, Scotland; George Stewart Clark, M.A., B.Sc., Scotland; Alexander Glover Coudlie, Scotland; Thomas Edmund Coulson, England; George Cunningham, M.A., Scotland; John Michael Dewar, Scotland; Robert Donaldson, M.A., Scotland; §Arthur Mitchell Dryden, Scotland; Thomas Henry Easton, Scotland; Charles Gordon Edmonston, Scotland; Edward John Elliot, Scotland; Nicolai Christian Fischer, Scotland; §Jules Michael Ralph Flament, Trinidad; William Henry Forsyth, England; § Louis Fourié, Cape Colony; Alastair Norman Fraser, Scotland; ‖William James Fraser, Scotland; Frederick Henry Gibson, England; Alexander Gibb Glass, M.A., Scotland; Alfred Marshall Gloag, Scotland; Harry Vivian Goldstein, England; Jean Paton Gordon, Scotland; James Methuen Graham, Scotland; William Wells Greer, Australia; Evan John Griffiths, Wales; Thomas Mansfield Guthrie, Scotland; Philip Anthony Harry, Jamaica; ‖Ephraim Henderson, M.A., Scotland; Alexander Wilson Hogg, New Zealand; George Staunton Husband, Jamaica; Knollys Ulric Alexander Inniss, Trinidad; John Jardine, Scotland; Samuel Alexander Johnston, Ireland; John Kirk, Scotland; George Francis Stirling Landon, England; Samuel Walter Sydney Leary, Ireland; Arthur James Lewis, England; ‖James Lochhead, M.A., B.Sc., Scotland; Charles Damien Lochrane, Scotland; James Blacklay Lockerbie, Scotland; Isabella Logie, Scotland; Archibald Duncan McCallum, England; Hugh McCalman, M.A., Scotland; William McConaghy, Ireland; John Pool McGowan, M.A., Scotland; §Hugh Ross Macintyre, Scotland; Norman Douglas Mackay, B.Sc., Scotland; Robert John Mackessack, M.A., Scotland; Amy Marion Mackintosh, Scotland; Elspeth Mary Macmillan, Scotland; Alexander MacRea, M.A., Scotland; Alfred Malseed, Ireland; Murat Marcus Mamourian, Smyrna; David Pieter Marais, South Africa; Aimée Eveline Mills, M.A., B.Sc., New Zealand; Lindsay Stephen Milne, Scotland; Gerald Irving Moriarty, Ireland; Thomas Bernard Mouat, Scotland; William Maxwell Muney, England; Donald Sutherland Murray, Scotland; Archibald Oliver, Scotland; Charles Duncan O'Neal, Barbadoes; Armand Pampellonne, Trinidad; William John Patterson, Ireland; William Patton, Ireland; Bernard Pickering, England; Florence Margaret Sarah Price, Wales; Labhhu Ram, India; Charles Reece, New Zealand; Alfred Ernest Carey Rees, B.A., England; Hugh Smith Reid, Scotland; Charles Henry George Ritter, Cape Colony; Margaret Helen Robertson, Scotland; William James Dunlop Robertson, Scotland; Joseph Robinson, B.Sc., England; Sheila Margaret Ross, Scotland; Charles Sydney Ryles, England; John Saffley, Scotland; John Glendinning Sharp Sand, Scotland; John Ingram Shepherd, M.A., Scotland; Frederick Ritchie Sinton, Scotland; Charles Johnston Smith, Scotland; George M'Call Smith, Scotland; William Arthur Wilson Smith, Scotland; Patrick Steele, Scotland; Francis Hugh Stewart, M.A., B.Sc., Scotland; Hugh Angus Stewart, Scotland; §Arthur Charles Strain, Scotland; Kenneth Andrew Moody Stuart, Scotland; Stuart Hopcraft Stanley Taylor, B.A., England; Herbert Marshall Thompson, England; Robert Stanley Enever Todd, M.A., B.Sc., Scotland; George Herbert Ussher, New Zealand; Robert Milne Walker, Scotland; Robert William Lessel Wallace, Scotland; Robert Honey Watt, Scotland; John Henry Douglas Webster, Scotland; David Percival Dalbreck Wilkie, Scotland; Friedrich Adolf Wille, Cape Colony; William Bruce Wishart, Scotland; Alfred Chad Turner Woodward, England; Cyril Haworth Wright, B.A., England; Thomas Wright, Ireland; and Margaret Campbell Wylde Young, M.A., Scotland.

§ Passed with second-class honours.
‖ Passed with first-class honours.

Special University Certificate in Diseases of Tropical Climates.—David Irving Anderson, M.B., Ch. B.; James William Herbert Babington, M.B., Ch. B.; Robert Balfour Barnetson, M.B., Ch. B.; John Evans Hackieu Bennett, M.B., C.M.; Alexander Robert Berrie, M.B., Ch. B.; Dudley William Boswell, M.B., Ch. B.; Mildred Margaret Lindsay Cathels, M.B., Ch.B.; Robert Alexander Chambers, M.B., Ch. B.; George Stewart Clark, M.A., B.Sc., M.B. Ch. B.; Robert Donaldson, M.A., M.B., Ch.B.; Arthur Mitchell Dryden, M.B., Ch.B.; Thomas Henry Easton, M.B., Ch.B.; Edward John Elliot, M.B., Ch.B.; Jules Michael Ralph Flament, M.B., Ch.B.; William Henry Forsyth, M.B., Ch.B.; Alastair Norman Fraser, M.B., Ch.B.; William James Fraser, M.B., Ch.B.; Jean Paton Gordon, M.B., Ch.B.; James Methuen Graham, M.B., Ch.B.; Philip Anthony Harry, M.B., Ch.B.; Ephraim Henderson, M.A., M.B., Ch.B.; Knollys Ulric Alexander Inniss, M.B., Ch.B.; James Lochhead, M.A., B.Sc., M.B., Ch.B.; William M'Conaghy, M.B., Ch.B.; John Pool M'Gowan, M.A., M.B., Ch.B.; Hugh Ross Macintyre, M.B., Ch.B.; Amy Marion Mackintosh, M.B., Ch.B.; Daniel Mackinnon, M.B., Ch.B.; Elspeth Mary Macmillan, M.B., Ch.B.; James Gibson M'Naught, M.A., M.D., C.M.; Lindsay Stephen Milne, M.B., Ch.B.; William Maxwell Munby, M.B., Ch.B.; Labhhu Ram, M.B., Ch.B.; Alfred Ernest Carey Rees, B.A., M.B., Ch.B.; Margaret Helen Robertson, M.B., Ch.B.; William James Dunlop Robertson, M.B., Ch.B.; Joseph Robinson, B.Sc., M.B., Ch.B.; Sheila Margaret Ross, M.B., Ch.B.; Francis Hugh Stewart, M.A., B.Sc., M.B., Ch.B.; Arthur Charles Strain, M.B., Ch.B.; Robert Stanley Enever Todd, M.A., B.Sc., M.B., Ch.B.; and John Henry Douglas Webster, M.B., Ch.B.

UNIVERSITY OF ABERDEEN.

—The following degrees and diploma have been conferred:—

Degree of Doctor of Medicine (M.D.).—Middleton Connon, M.B., C.M., Montrose (under old regulations); James Cran, M.B., C.M., Belize, British Honduras (under old regulations); Ernest King Gawn, M.B., C.M., London (under old regulations); Henry Gibbons, M.B., C.M., Market Harborough (under old regulations); Peter Harper, M.A., M.B., C.M., London (under old regulations); *David Albert Hutcheson, M.B., Ch.B., Aberdeen; †Arthur Hugh Lister, B.A., M.B., C.M., Aberdeen (under old regulations); ‡Hugh MacLean, M.B., Ch.B., Aberdeen; John Smith Purdy, M.B., C.M., Morpeth (under old regulations); *Arthur Westerman, M.B., Ch.B., London; and *George Nicol Wilson, M.B., C.M., Aberdeen.

* Commendation for thesis. † Honours for thesis.
‡ Highest honours for thesis.

Degree of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.).—§Cyril Moore Smith, Cheshunt, Herts (with second-class honours); Catherine Emslie Anderson and John Anderson, Aberdeen; Wm. Robert Catto, Aberdeenshire; William Gillespie Bryson Gunn, Cullen, Banffshire; Alexander Hendry, Ellon, Aberdeenshire; Thomas Christie Innes, Skene, Aberdeenshire; Henry Williams Jeans, Portsmouth; John Jenkins, M.A., Burghead; Frederick Leonard Keith, Helen M'Glashan, and Roderick Mackay, M.A., Aberdeen; James Reid, M.A., Dublin; Michael Balfour Hutchison Ritchie, Inverurie; Fife Slater, Hopeman, Morayshire; James Hutcheon Thomson, Turriff; and Robert James Barron Wright, Forgue by Huntly.

§ Passed final examination "with distinction."

Diploma in Public Health.—Hugh Johnston, M.B., Ch.B. Aberd., Auchnagatt; and William Mackie, M.A., M.B., C.M. Aberd., Elgin.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS.

—The following candidates have passed the third examination as undernoted:—

Passed in all Subjects.—T. A. Burke, M. Cohen, E. G. Condon, P. F. Foran, W. Glennon, C. W. Greene, W. P. Kelly, T. H. Massey, M. O'Connor, J. R. Tobin, and C. H. Wilson.

Completed Examination.—R. Calnan, C. J. R. Clarke, S. C. Clarke, T. W. Conway, J. Corboy, J. B. Dwyer, T. J. Golding, P. E. Hayden, R. F. Hayes, H. Hosty, A. E. S. Irvine, L. F. Kelly, M. J. C. Kennedy, F. G. McCaughey, T. J. Madden, R. V. Murphy, J. O'Donnell, W. D. Sammon, P. D. Sullivan, and W. G. Wright.

First Examination in all Subjects.—P. J. Timoney.

THE CENTRAL MIDWIVES BOARD.

—The members of the Central Midwives Board met on July 21st at 6, Suffolk-street, London, S.W., Dr. F. H. Champneys being in the chair. A letter was read from the Registrar-General as to death certificates of midwives. It appears that it is the duty of the various local authorities mentioned in the Midwives Act to report to the Central Midwives Board the deaths of midwives. It was decided that Mr. J. Heywood Johnstone, M.P., one of the members of the Board, should be asked to bring the matter before the Association of County Councils. A letter from the town clerk of Brighton inclosing a report by the medical officer of health of Brighton on the working of the Midwives Act was then read and the Board decided to ask the town clerk of Brighton to forward a report on the matter for its consideration. The following is the scheme of examinations which will come up for final consideration in the autumn:—

Examiners.—1. A list of examiners, both for London and the provinces, shall be prepared by the Central Midwives Board from those who are willing to serve and act when required by the Board. This list shall be subject to annual revision by the Board. Before such a list is formed application for the post of examiner shall be invited by advertisement. 2. Every examination shall be partly oral and practical and partly written, and shall be conducted by not fewer than two examiners. 3. No examiner shall examine his own pupils. 4. The first examination shall be held in May, 1905. 5. Thereafter the examination shall be held four times a year, or oftener if necessary, in London and the provinces simultaneously on the same papers. The Board reserves to itself the right to appoint one or more qualified medical practitioners as visitors of the examinations, both London and provincial, when it appears desirable. 6. The first provincial centres shall be: (*a*) Bristol; (*b*) Manchester; and (*c*) Newcastle-on-Tyne. 7. A paper of directions to examiners shall be drawn up and issued to each examiner on his appointment. 8. The remuneration of an examiner shall be at the rate of 7*s.* for each candidate examined.

London examiners.—1. The examiners, both London and provincial, shall be invited to meet at the offices of the Central Midwives Board as often as may be necessary. 2. The arrangements for the examinations shall be made by the secretary of the Central Midwives Board with such extra assistance as may be necessary. 3. The duties of the London examiners shall be: (*a*) To consider examination questions suggested by provincial examiners. (*b*) To set all the papers of examination questions both for London and the provinces. Two of the examiners, with the assistance of one of the medical members of the Board to be appointed for the purpose, shall undertake this duty in rotation. The remuneration of the examiners shall be two guineas each. (*c*) To conduct the examination, written and oral, of all candidates presenting themselves for examination in London. (*d*) To report to the Central Midwives Board the result of each examination held in London.

Provincial examiners.—1. The examiners appointed by the Central Midwives Board to conduct the Board's examinations in a provincial centre shall assist the secretary of the Board in making the necessary arrangements for the examinations. 2. One of the examiners shall be responsible for reporting the result of each examination to the Central Midwives Board.

Directions to examiners.—1. The paper shall consist of not fewer than

six questions and the time allowed for answering shall be three hours. 2. Notes should be taken either by the examiner himself or by a colleague of the subjects upon which the candidate is questioned in the oral examination. 3. 15 minutes should be considered an average period for the oral examination of each candidate. 4. Examiners should avoid questioning candidates as to where and by whom they were trained so as to avoid any suspicion of bias.

THE LATE DR. GEORGE CHARLES WIGAN OF PORTISHEAD.—A beautiful stained-glass window of three lights in memory of the late Dr. G. C. Wigan and Mrs. Wigan has been placed in Portishead (Somerset) parish church and was dedicated by the rector on July 16th.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—Mr. C. W. H. Fleming, L.M. and S. Dublin University, having passed the necessary examination has been admitted a Fellow of the College. Miss S. H. Commissariat, L.M. and S. Bombay University, has passed the primary part of the Fellowship examination.

DONATIONS AND BEQUESTS.—Mr. John Hunter, the President of the Exmouth Cottage Hospital, has given £500 towards the funds of that institution.—Mr. A. Barlow of Southampton has given a donation of £3500 to the Royal South Hants and Southampton Hospital. Within the last few years Mr. Barlow has given £10,000 to this institution.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the Oxford-street Schoolroom, Totterdown, on July 22nd, the members of the Totterdown (Bristol) and District Branch of the City and Marine Ambulance Corps presented Mr. J. J. Scammell Lucas, B.A. Lond., L.R.C.P. Lond., M.R.C.S. Eng., with a silver cigarette case, suitably engraved, as a mark of appreciation of his services as honorary instructor.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following students who attended the school during the session from May to July, 1904, have passed the examination at the end of the course with distinction: J. Currie (Colonial Service), A. King (Colonial Service), E. Maples (Colonial Service), P. N. Gerrard (Colonial Service), and C. A. Suvoong.

WESTERN OPHTHALMIC HOSPITAL, MARYLEBONE-ROAD, W.—A new out-patient department has been built at this institution at a cost of £3800. This was opened recently by the Marquis of Ripon, K.G., the President, who was supported on the platform by Mr. Diggle, J.P., the chairman of the committee, Sir Reginald Hanson, Bart., the treasurer, and Sir Anderson Critchett. This department, which is now brought up to date and fitted up in the most improved style, will greatly facilitate the work connected with the out-patients who have so largely increased during the last few years. The committee hopes before long to be in a position to rebuild the in-patients' department and so to make the hospital complete in every way.

LITERARY INTELLIGENCE.—The seventh edition of Dr. Frederick Taylor's "Practice of Medicine" will be published immediately. The work has been subjected to a very thorough revision since the last edition and considerable alterations and additions have been made, especially in the sections on influenza, malaria, dysentery, the examination of the nervous system, spinal sclerosis, myoclonus, the treatment of phthisis, arterial degenerations, gastric disorders, diseases of the pancreas and of the blood, Glénard's disease, nephritis and diabetes. Other subjects are now introduced for the first time into the book which will be issued by Messrs. J. and A. Churchill. The same publishers also announce a new book by Dr. Thomas Carruthers entitled "Urine Examination made Easy, a Method of examining Urine with the Common Tests fully Described"; and a work "On the Development and Anatomy of the Prostate Gland, together with an Account of its Injuries and Diseases and their Surgical Treatment," by Mr. W. G. Richardson. This is the successful Heath scholarship prize essay.

COMPLIMENTARY DINNER TO A MEDICAL PRACTITIONER.—A complimentary dinner was given on July 19th at Bedford to Dr. George P. Goldsmith by the medical men of Bedford and its neighbourhood in order to express to him their esteem and goodwill on his retirement from practice in Bedford after more than 40 years' service and on his departure from the town. 20 medical men sat down to dinner while nearly 20 regretted their enforced absence and joined in the general expression of esteem. Dr. Rowland H. Coombs occupied the chair. The menu was interspersed with some striking Latin epigrams. Dr. Goldsmith went to Bedford as a young man and has seen great changes in the town. He gave his services to the hospital for more than 30 years, when he was made consulting physician, and was first president of the Bedford Medical Society. For some years he represented the archdeaconry at the Diocesan Conference and he was a member of the elementary school board throughout its existence, and subsequently a co-opted member of the school committee. It is also intended to present Dr. Goldsmith with a Greek Testament, a Hebrew lexicon, and other works which will be valuable to him.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Alcohol for Industrial Purposes.

IN the debate on the Finance Bill the Chancellor of the Exchequer said that he had seen enough to convince him that the possible use of alcohol in manufactures had increased very considerably in recent years and that much development would follow. He was anxious to remove obstacles to enterprise in this country and he had decided to appoint a departmental committee to inquire into the whole subject.

HOUSE OF COMMONS.

THURSDAY, JULY 21ST.

Alcohol for Industrial Purposes.

Colonel DENNY asked the Chancellor of the Exchequer whether any facilities were given for the manufacture of alcohol for industrial purposes under special Excise regulations, so as to make the duty as small as possible, what was the minimum duty charged upon alcohol after denaturalisation, and how did this duty compare with that exacted in Germany, France, Austria, Belgium, Holland, and Italy upon spirit used for industrial purposes, including alcohol engines.—Mr. AUSTEN CHAMBERLAIN said: There are no special facilities given for the manufacture of alcohol used for industrial purposes. There is no duty charged upon spirit of British manufacture used for methylation or for purposes sanctioned under Section 8 of the Finance Act, 1902, but upon foreign spirits so used a differential duty of 5*d.* per proof gallon is charged. About three years ago the Board of Inland Revenue obtained through the Foreign Office information as regards the terms upon which alcohol may be used for industrial purposes in the principal countries of the continent and in the United States of America and, so far as it can judge from the returns then made, no duty is charged upon alcohol so used in any of the countries named. It is, however, difficult to say whether this would be true in all cases, as in some countries the tax on alcohol is not a single tax but a combination of several duties chargeable at different stages of manufacture or of sale, and it is not certain that all of these are remitted in all cases of use of alcohol for industrial purposes.

German Sanatorium Syndicate.

Sir WALTER FOSTER asked the Under Secretary of State for Foreign Affairs whether he had received any fresh information as to the German Sanatorium Syndicate from Lisbon or Madeira; and whether, if the concession was still unsigned, he would instruct the British Minister at Lisbon to ask for equality of treatment for British residents in Madeira as regards the exemptions and privileges which the Germans were acquiring to the detriment of British commercial interests.—Earl PERCY replied: His Majesty's Government is in communication with the Portuguese Government and I am unable to make a further statement at present. No concession has yet been given for the supply of water.

Accommodation for Sick Poor.

Mr. HERBERT SAMUEL asked the President of the Local Government Board whether the Board regarded as adequate the accommodation provided for the sick in the Eastville workhouse, belonging to the Bristol board of guardians; how many members of that board of guardians on a recent occasion voted for and how many against the provision of better accommodation; and whether he proposed to take any further action in this matter.—Mr. LONG said: The accommodation for the sick poor of the parish of Bristol is admitted by the guardians to be inadequate and unsatisfactory and they have for a long time past been considering various schemes for providing better accommodation. That now proposed seems to have been adopted by them at a meeting held on June 15th. From a newspaper account of the proceedings I observe that an amendment which appears to have been supported by those who were not in favour of the particular scheme in question was rejected by 26 votes to 23. The scheme has now been submitted to me and I shall shortly address a communication to the guardians with regard to it.

Vivisection.

Dr. J. G. SHIPMAN asked the Secretary of State for the Home Department whether the law concerning the payment of dog licences was enforced in the case of dogs kept for vivisection in places registered for that purpose.—Mr. AKERS-DOUGLAS replied: I am informed by the Board of Inland Revenue that the answer is in the affirmative.

Suspended Animation.

Colonel LOCKWOOD asked the Secretary of State for the Home Department whether he had yet received any report from Professor Schäfer with regard to the experiments performed by him in connexion with the drowning of dogs; and, if so, whether he would state the result as it affected the advancement by new discovery of physiological knowledge or of knowledge which would be useful for saving or prolonging of life or alleviating suffering.—Mr. AKERS-DOUGLAS said: The only report which I have as yet received is a copy of a paper by Professor Schäfer entitled "Description of a Simple and Efficient

Method of performing Artificial Respiration in the Human Subject, especially in Cases of Drowning." This is the outcome of the investigation made by Professor Schäfer on behalf of the Committee on Suspended Animation appointed by the Royal Medical and Chirurgical Society and I would refer the honourable Member to that paper for information in the matter.

Lay Inspection of Workhouse Hospitals.

Dr. E. C. THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland whether in view of the fact that Irish workhouses and workhouse hospitals were inspected by lay inspectors without any technical experience and in view of the condition of the Irish workhouses as proved by the evidence given before the Viceregal Commission now sitting he would direct the Local Government Board so to re-arrange the duties of its inspectors that these institutions shall be in the future inspected only by expert medical inspectors.—Mr. WYNDHAM replied: As already stated in reply to the honourable Member's previous question of the 12th inst. the hospitals attached to workhouses are inspected by medical inspectors who have been specially appointed for the purposes. The workhouses are inspected by experienced lay inspectors who, in the Board's opinion, possess the necessary qualifications for the duty. Until the report and evidence of the Viceregal Commission have been received no definite conclusions can be arrived at concerning the matters investigated by the Commission.

Aged Poor-law Medical Officers.

Dr. THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that several Poor-law medical officers in Ireland were over 75 years of age and were still retaining their appointments, and, if so, whether he would authorise the Local Government Board to frame rules which would allow those officers to tender their resignations subject to their being satisfied with the retiring allowance granted them by the local authorities.—Mr. WYNDHAM said: No doubt some of the Poor-law medical officers are advanced in years but in the absence of a compulsory Superannuation Act it is not possible for the Local Government Board to compel them to resign, unless, of course, they fail to discharge their duties satisfactorily. The proposal that medical officers should be permitted to tender their resignations provisionally is not feasible. Under the Union Officers' Superannuation Act, 1865, a pension can only be awarded to an officer upon his resigning or otherwise ceasing to hold office.

Probationers in the Royal Army Medical Corps.

Dr. THOMPSON asked the Secretary of State for War whether he was aware that medical officers who were appointed probationers in the Royal Army Medical Corps between the years 1880 and 1885 were not allowed to count their six months' service at the Army Medical School at Netley as part of their army service and, seeing that this disqualification had been removed since the year 1885, whether he would direct that officers who served in the Army Medical School at Netley between the years 1880 and 1885 would be placed, as regarded these years, on a similar ratio to officers appointed since the later date.—Mr. ARNOLD-FORSTER said: The honourable Member has been somewhat misinformed in his data. In the first place the probationary period at the Army Medical School was four months and not six. In the second place the change in the procedure took place in 1902 and not 1885, by which service while on probation and under instruction at the Royal Army Medical College and Depôt Royal Army Medical Corps (for a period of five months) is reckoned. In these circumstances I am not prepared to antedate the commissions in the manner suggested.

MONDAY, JULY 25TH.

Vaccination of Prisoners.

Mr. WEIR asked the Secretary for Scotland whether he would state by whose authority prisoners in Glasgow Prison had recently been vaccinated; and whether they were given the option of refusing to undergo the operation.—Mr. GRAHAM MURRAY replied: When epidemics of small-pox have broken out in Glasgow Dr. A. K. Chalmers, the medical officer of health, has suggested that prisoners should be vaccinated or revaccinated and the Prison Commissioners have approved of this being done, provided always that the prisoner did not object and that the prison medical officer considered it necessary. No prisoner is required to be vaccinated or revaccinated without his consent.

Ignorance of Laws of Hygiene.

Dr. E. C. THOMPSON asked the Secretary to the Board of Education whether in view of the results which followed from the prevailing ignorance of the laws of hygiene he would consider whether some arrangement could be come to with the members of the medical profession resident in each school district whereby occasional lectures could be given in the laws of public health in all the schools in Great Britain and Ireland.—Sir WILLIAM ANSON replied: The Board of Education has no jurisdiction in regard to Scotland and Ireland. It would be glad of any assistance which could be obtained from the medical profession on this matter of hygienic teaching. But the number of public elementary schools in England and Wales is over 20,000; the public secondary institutions under the jurisdiction of the Board number over 3000. There are also a very large number of private schools. I should have thought that it was open to doubt whether the medical profession could undertake to deliver courses of lectures in this immense number of schools in each year, even if the Chancellor of the Exchequer or the local authorities were prepared to find the large sum which would be needed to provide adequate remuneration for the proposed lectures.

Arsenical Poisoning.

Mr. MACVEAGH asked the First Lord of the Treasury whether his attention had been called to the recommendations of the Royal Commission on Arsenical Poisoning, paragraph 168, in which it recommended the appointment of a special officer with suitable scientific knowledge and adequate laboratory assistance to make authoritative investigation where new risks to health were suspected and also to advise how work under the Sale of Food and Drugs Act might be run on satisfactory lines; and whether, in view of the increase in lunacy and crime attributed by the medical profession and medical officers of health to the unrestricted sale of patent spirit as whisky, he would act on the recommendation of the said Commission by the appointment of a suitable officer.—Mr. BALFOUR said: I have consulted with the President of the Local Government Board and he informs me that the recommendations of the Royal Commission referred to are engaging his special attention.

TUESDAY, JULY 26TH.

Physical Deterioration.

Dr. MACNAMARA asked the First Lord of the Treasury whether it would be possible to arrange a time for the discussion of the report laid last Thursday of the Inter-Departmental Committee on Physical Deterioration.—Mr. BALFOUR said that he could not give any pledge at present.

Consumption of Immature Spirits.

Mr. MACVEAGH asked the Chancellor of the Exchequer whether he was aware that the leading physicians and the medical officers of health of the United Kingdom had unanimously condemned the consumption of immature raw potable spirits as injurious to the health of those who drink them; and whether he would take steps to retain compulsorily such spirits in bond for a period of at least three years, as was done in Canada and other countries.—Mr. AUSTEN CHAMBERLAIN answered: I do not quite know to what the first paragraph in the honourable Member's question is intended to refer. With regard to the latter part of the question I must ask the honourable Member to refer to an answer which I gave to a question of his on the same subject on Feb. 15th last to which I have nothing to add.

THE SELECT COMMITTEE ON THE REGISTRATION OF NURSES.

The Select Committee of the House of Commons which is considering the expediency of adopting a system of State registration of nurses met again on Thursday, July 21st, and heard further evidence.

Mr. M. C. WALSH, managing director of the Male Nurses' Coöperation (Limited), stated in reply to the Chairman (Mr. H. J. TENNANT) that he had had 17 years' experience in connexion with nursing. The Male Nurses' Coöperation had branches in London, Manchester, and Edinburgh. There was a very large and increasing demand for the services of male nurses. The demand, indeed, was greater than the supply. There was nothing like uniformity in the training of male nurses, although there ought to be on account of the great demand for them. Male nurses mainly came from the large asylums and infirmaries and the only test existing was that of the Medico-Psychological Association. The coöperation did not limit itself to mental cases but supplied medical and surgical nursing. In most of the asylums there was a uniform system of training but in the infirmaries there was none that he knew of and this was one of the great difficulties which the coöperation had to contend with. They wished to have an opportunity of training them in the general hospitals if possible, but it appeared that there existed in the hospitals a very great prejudice against having male nurses there.

The CHAIRMAN: Do you say that the medical men have set their faces against them?

Mr. WALSH: I do not say that. Continuing, he said that he saw no danger from examination. It would be possible to bring out by examination the qualities that he would like to see. A central authority would be to the advantage of the male nurses and the public also. Examination with a system of certificates would very much improve the class of male nurses. Powers should be given to the central body to remove a person from the register on the ground of crime or on complaints from the medical man attending the case who would be at liberty to communicate with the central body as to misconduct. He saw no difficulty in putting such a system into force. The central authority would be in a much better position to deal with such matters than people were at present. Under existing conditions any nurse having a certificate from a hospital could go on from one institution to another after being dismissed but if she had a certificate from a central institution the medical man could always refer to the register or communicate with that body. There were many institutions at the present time that would take in nurses, especially male nurses, who were discharged from any other institution without reference to character. He thought there should be some system to control those homes for the safeguarding of the public.

The CHAIRMAN: It is suggested that a certificate would only state on its face that a person was certified as competent at a particular time, that it is conceivable that after a lapse of years that person might become incompetent, and that therefore the public would be lulled into a false sense of security.

Mr. WALSH: I do not think so. There might be improper or unsuitable nurses but if they have followed the calling they would not be incompetent. It ought to be possible to remove such persons from the register. At present a certificate was sufficient and it went on for ever. If the nurse was dismissed she went to another institution. Under a register that would be absolutely impossible. He knew many cases of improper persons nursing. The better class male nurses would not hesitate to pay a fee of three or four guineas for registration. The infirmaries and asylums of which he had spoken, he thought, would be inclined to fall in with such a system as he desired. The asylums were doing a good deal in that direction already.

Replying to Sir JOHN BATTY TUKE, Mr. WALSH said that he would not alter the whole system of hospital training. There were cases which ought not to be nursed by a female—cases of paralysis and so on. A number of male nurses employed in asylums or infirmaries would not apply for registration but the better class outside who were doing private work would certainly apply.

Sir JOHN BATTY TUKE: Do you think that a woman ought to be struck off on the complaint of a medical man?

Mr. WALSH: After inquiry.

Sir JOHN BATTY TUKE: Do you not think that would seriously increase the work of the Board?

Mr. WALSH: That is one of the reasons why the Board should exist.

Replying to Mr. MOUNT Mr. WALSH said that he considered that a certain number of years' training in all infirmaries would be of great use in certain cases. The present system was not uniform. If a medical man were made responsible for all the nurses he engaged he would have a bad time of it. There were emergency calls. He had been rung up three or four times a night by medical men who knew nothing about him and he might supply them with anybody. They could not be responsible for all the nurses they got.

Answering further questions Mr. WALSH referred to a letter which had appeared in THE LANCET in support of his contention that some female nurses would not take some kinds of cases. The medical man who wrote the letter, which appeared on June 11th, stated that in the case

of a patient in the East-end of London the nurses absolutely refused to nurse him. It was a case for a male nurse.

Mr. C. HOBHOUSE said that he did not see the bearing of this evidence on the inquiry.

Mr. WALSH said that a policy of training would enable sufficient men to be at hand to take up such cases. During the year several thousands of cases were nursed through his association, probably 5000 or 6000. They had between 200 and 300 nurses. The average charge was £2 4s. 6d. per patient, but patients with very moderate means were charged less. The patients nursed were generally well-to-do. If registration came about it would not be possible to charge a higher fee. He did not think that the increase in the number of male nurses which was going on very rapidly would be checked by a registration charge of £5.

Answering Mr. PIERPOINT Mr. WALSH said that there ought to be an examination of asylum attendants. They would require to have a special certificate. If a medical man made a communication to the central board regarding the competency or unfitness of a nurse it ought to be privileged.

Dr. C. F. HUTCHINSON: Would it satisfy you if the homes were registered and made responsible for their own nurses?

Mr. WALSH: I hardly know why the homes should be penalised. Many of them are philanthropic institutions. If the institutions were made responsible, he added, they would have to pay all the expenses of registration.

Miss HOBBS, secretary of the Royal British Nurses' Association, said that she had been in hospitals for a number of years and that she was in favour of State registration because there was at present no uniformity. The central board should have power to remove anyone who was criminal or criminally unfit for her work. Her employers should be the judge. A medical man or a patient might make privileged communications to the board. She thought that the nurses ought to apply annually for registration on payment of a small fee, and that they should produce certificates as to character, physical fitness, and technical fitness for their employers or for registered practitioners who knew them. She saw no difficulty in requiring a nurse to pay half a crown a year. An initial fee of three guineas would be sufficient. Her association had registered 2500 nurses and the annual number was about 120. That was a small proportion of the nurses working round London. Voluntary registration gave the public some guarantee of good conduct because the association made the most definite inquiries about its nurses.

Mr. HOBHOUSE asked whether it would not be rather dangerous to give the medical attendant power to say that a nurse had systematically neglected a patient.

Miss HOBBS replied that the central body would not take the statement of one man alone. It might possibly be from 20 or 30 people. There must be a continued neglect of duty. From the nurses' point of view it was of serious importance that they should have uniformity of training and that the certificates of various hospitals should be of equal value. It was not possible for every woman to get her training in the best hospitals. In many cases nurses were made use of and were not taught. She admitted that it would be better than at present if institutions were to register and to be made responsible for sending out nurses who had had two or three years' training but that would not meet the case.

The Committee adjourned.

On the Committee resuming on July 26th,

Miss AMY HUGHES, superintendent of the County Nursing Associations in affiliation with the Queen Victoria Jubilee Nursing Institute, gave evidence in support of the State registration of nurses. She pointed to the great diversity in the training received by nurses. It had been stated in previous evidence that responsibility of choosing a nurse lay on the medical man who was able from his knowledge and experience to test her capability, but she asked how it was possible for a medical man who had just taken a practice to examine the training of a nurse who had been sent to him on an emergency. She might have been trained in Dewsbury, Tunbridge Wells, Gloucester, Worcester, or elsewhere. She would have a certificate but there was no standard for the training represented by the certificate. Nurses came to the Victoria Jubilee Institute from all parts and it was only from expert knowledge and experience of the training received in the different hospitals that they were able to accept or to reject applicants. It had been pointed out that nursing institutions were no longer held legally responsible for their nurses. It was only after mistakes that the medical men or the institutes found out that a nurse was not properly qualified. The patients had to suffer in such cases before they proved the value of the nurse's training. She fully admitted the value of the large training schools for nurses but all could not gain admittance to them. At the London Hospital there were annually 140 vacancies and 2000 applications; at Guy's Hospital 90 vacancies and 3000 applications; at St. George's, 30 vacancies and 1000 applications; at Leeds General Infirmary 20 vacancies and 400 applications; and at Liverpool Royal Hospital 30 vacancies and 900 applications. There were many cases of nurses who did not know the value of a certificate and who after working two or three years found that they were not getting a proper training but were throwing away their time. The Victoria Jubilee Institute was the only institution in which the work of the nurses when actually attending to their patients was seen after they left the training schools. That institute had a staff of inspectors. Certificates once given to nurses could not be taken away and while the wording of certificates varied very much no mention was made of moral conduct. These facts proved the great need of some outside authority or board of appeal to which these difficult matters could be referred. Revision by the central board from time to time would be a desirable thing. The nurses might be required to notify the fact that they were still in practice. If she might say so, Parliament had already faced the difficulty when it passed the Midwives Act, under which power was given to the Central Board to decide upon removal from the register for disobedience of the rules and regulations from time to time laid down. She took it that there would be no difficulty in doing the same thing again in the case of nurses. It would be quite possible for a central board or its agents to ascertain the real facts as to contravention of regulations. She might suggest that a subcommittee should be formed consisting of matrons and others in authority, medical men, and laymen interested in the subject, who should investigate quietly and with caution any matter that seemed deserving of inquiry. With regard to the case of a nurse who had married, whose husband had died, and who wished to resume nursing, there would be no difficulty in reinstating a nurse. Under the Midwives Act the Central Board could consider the restoration of a name. A subcommittee would make the necessary inquiries and report to the board. Communications to the board should be privileged. The Midwives Act allowed an appeal to the High Court of Justice within three months after the notification of removal from the register.

Replying to Mr. MOUNT she said she did not think that the expense of three years' training would keep out the class of nurses who had been servants. They received a small salary during training.

Mr. R. AMBROSE asked whether there was any general demand on the part of the public for the registration of nurses.

Miss HUGHES said that in the country she had talked with medical men and the public also and she had again and again heard how desirable it would be to have the registration of nurses.

Mr. AMBROSE remarked that it was extraordinary that though he had been in the country also he had never heard it yet.

Mr. AMBROSE: Do you wish this central association to have the power of rejecting any certificate of any hospital?

Miss HUGHES: No. The nurses would come with their certificates and ask to be examined. The nurse, after having been trained in a hospital, would have to satisfy the central board of her fitness.

Mr. AMBROSE put a series of questions as to the associations which would desire to be represented on the central board, and the witness answered that she expected her own association to be represented.

Mr. AMBROSE, on a question arising as to the line of cross-examination, said he had wanted to show that those associations desired to run this thing and not the public at all.

In reply to Dr. C. F. HUTCHINSON Miss HUGHES said she was strongly in favour of a central board with examination. Nurses would willingly pay fees. It had been stated that bad nursing was common but she thought it was not common. It was not a crying evil. The registration of institutions of nurses would hardly answer the purpose they had in view, because so much depended on the standard which each institution chose to adopt. Women had a right to take the responsibility on themselves. They ought to be free to make their own conditions and not be at the beck and call of institutions. It would prove a very great handicap in the case of a woman who wanted to nurse but who could not join an institution.

Dr. HUTCHINSON asked whether it would not be possible to register the institutions and make them guarantee that their nurses were properly trained and so on.

Miss HUGHES said that would answer in the large cities but not in small country places.

In answer to Sir JOHN STIRLING MAXWELL she admitted that the fitness of a nurse for registration would be covered by the certificate and inquiries could be made. The hospitals must not be relieved of all responsibility in selecting women.

Mr. PIERPOINT asked whether a medical man ought to be allowed to communicate to a central board accusations against a nurse without being monetarily liable.

Miss HUGHES said she thought medical men ought to have a right to make representations if they thought nurses were not carrying out their duties properly.

Mr. PIERPOINT asked whether there might not be a case of a skilful nurse and an incompetent surgeon who had made a mistake and who might use this power to induce the nurse to say nothing.

Miss HUGHES said she had never heard of such a thing occurring in all her experience. She could not imagine it. Medical men were very good on the whole.

Dr. FENWICK having made some additions to his previous evidence the committee adjourned. No further evidence will be heard this session.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLAN, JOHN, M.B., Ch.B. Edin., has been appointed House Surgeon to the County Hospital, Ayr.

ARMSTRONG, GEORGE, M.B. Melb., has been appointed Assistant Honorary Medical Officer, Women's Hospital, Sydney, New South Wales.

BELL, H. C. RIKARD, M.B. Syd., has been appointed Visiting Surgeon to the Gaol at Wilcannia, New South Wales.

BENNETT, JAMES FREEBORN, M.B., B.Ch. Glasg., has been appointed Public Vaccinator for New Plymouth, New Zealand.

COWPER, WILLIAM P., L.R.C.P. & S. Edin., has been appointed House Surgeon to the Royal Westminster Ophthalmic Hospital.

DALLY, J. F. HALLS, M.A., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed the Senior Resident Medical Officer to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, I.W.

DECK, HENRY O'BRIEN, M.B., B.Ch. Melb., has been appointed Public Vaccinator for Motueka, New Zealand.

DENT, CLINTON T., F.R.C.S. Eng., has been appointed Chief Surgeon to the Metropolitan Police.

DEY, ROBERT, M.B. Syd., has been appointed Visiting Surgeon to the Gaol at Bourke, New South Wales.

DONALD, C. W., M.D., F.R.C.S. E., has been appointed Surgeon to Cumberland and Westmorland County Constabulary.

DUPONT, J. M., M.B., Ch.B. Edin., has been appointed an Assistant Resident Medical Officer to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, I.W.

FOX, WALTER, M.B., Ch.M. Glasg., has been appointed Public Vaccinator for Christchurch, New Zealand.

LEES, GEOFFREY JOHN, M.B. Syd., has been appointed Government Medical Officer and Vaccinator at Adelong, New South Wales.

NICHOLSON, HARRY OLIPHANT, M.D. Aberd., F.R.C.P. Edin., has been appointed Assistant Physician to the Royal Maternity and Simpson Memorial Hospital, Edinburgh.

OLVER, THOMAS, L.R.C.P. Lond., M.R.C.S., has been appointed to the Medical Charge of the Troops at Crownhill, South Devon.
ORCHARD, ALBERT JOHN, M.B., Ch.M. Edin., has been appointed Public Vaccinator for Christchurch, New Zealand.
PAYNE, J. W., M.R.C.S., L.S.A., has been appointed Port Officer of Health for Devonport, Tasmania.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Medical Officer, unmarried. Salary £120, with board, apartments, attendance, and washing.
BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.
BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon and Anæsthetist. Also Resident Casualty Officer. Salaries at rate of £50 per annum, with, board, lodging, and washing.
COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.
DARENTH ASYLUM, Dartford, Kent.—Two Resident Medical Officers (Locum Tenens). Salary £4 4s. per week.
DEVONPORT ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, also House Surgeon, both for six months, and unmarried. Salary in each case £20, with board and residence.
HUMBERSTONE ASYLUM, Leicester.—Assistant Medical Officer. Salary £200 per annum, with furnished quarters and board.
INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.
KENT COUNTY LUNATIC ASYLUM, Barming Heath, near Maidstone.—Chief Medical Officer and Superintendent. Salary £800, with unfurnished house, &c.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Resident Medical Officer for the Country Branch Hospital at Northwood, Middlesex. Honorarium £80, with board and residence. Also Honorary Dental Surgeon.
NORTH CAMBRIDGESHIRE HOSPITAL, Wisbech.—Resident Medical Officer, unmarried. Salary £100 per annum, with furnished rooms, attendance, coals, gas, and washing.
ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.
ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, Devonport.—Assistant House Surgeon. Salary at rate of £50 a year.
ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at rate of £30 per annum, with board, residence, and laundry.
SOUTH SHIELDS, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £300 per annum, rising to £500.
SOUTH UIST PARISH.—Medical Officer and Public Vaccinator. Salary £77 10s.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.
WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, &c.
WEST RIDING ASYLUM, Wakefield.—Locum Tenens for two or three months. Salary £3 3s. per week, with residence, board, &c.

Births, Marriages, and Deaths.

BIRTHS.

HAVELOCK.—On July 21st, at Sunnyside, Montrose, N.B., the wife of John G. Havelock, M.D., of a son.
LIGHT.—On July 21st, at Tillingham, near Southminster, Essex, the wife of Leonard W. Light, M.R.C.S., L.R.C.P. Lond., of a son.
PRINCE.—On July 14th, at Reigate, the wife of Peregrine C. Prince, M.R.C.S., L.R.C.P., of a son.

MARRIAGE.

THOMAS—ATKINSON.—On July 20th, at St. Mary's Church, Handsworth, Yorks, by the Rev. Francis Atkinson, M.A., Rector of St. Mary's, Birtnam, N.B., uncle of the bride, assisted by the Rev. Cyril Walker, M.A., curate of Averham, Notts, and by the Rev. James Mowat, M.A., rector of the parish, George Crewdson Thomas, M.D., M.R.C.P., of Sydenham, only son of George E. Thomas, of Swainswick, Bath, to Eveline Mary, elder daughter of William Atkinson, The Birklands, Handsworth.

DEATHS.

GLASSINGTON.—On July 25th, suddenly, at 6, Pelham-crescent, S.W., Louise, the dear little wife of Charles W. Glassington, M.R.C.S., L.D.S.
SIMON.—On July 23rd, at Kensington-square, in the 88th year of his age, Sir John Simon, K.C.B., F.R.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WHAT IS THE PROPER REPLY?

A CORRESPONDENT has asked us how he should reply to the following letter which has been addressed to himself and his partners by a gentleman who has started in the neighbourhood as an "optologist":—

GENTLEMEN,—Having been successfully examined by Dr. Andrew Wilson, Dr. E. H. Tipper, Mr. J. T. Gradon, M.A., and Dr. E. H. Cook, D.Sc. Lond., who are the examiners to the British Optical Association, I am writing to ask if you would help me by sending any cases of defective vision which can be corrected by refraction. I have had a room fitted up over Mr. ——'s pharmacy solely for sight-testing and have the most modern apparatus. The two main points of the above association are: 1. To protect the public against unscientific persons who prescribe glasses. 2. That its men are so trained that they know directly should medical advice be necessary. I am, yours faithfully,

The writer incloses a card in which he styles himself M.P.S., D.B.O.A., and "optologist." We do not think the communication requires any reply. The "optologist" can be used as an optician if his services are wanted, but he must be careful not to practise ophthalmology, an integral branch of medicine, without medical knowledge.

REMARKABLE PHENOMENON OF CRYSTALLISATION.

THE *Scientific American* of July 16th states that a curious phenomenon was observed lately by Professor Stanislas Meunier of the University of Paris. He found that a certain number of plaster balls left to dry after a short immersion in salt water became entirely transformed into a conglomeration of gypsum crystals and some of the latter reached one-fifth of an inch in length. In an account of this phenomenon which he gave to the Académie des Sciences he states that although the balls of plaster had been formed under quite similar conditions and even used in the same experiments they were far from showing the same crystalline appearance. In some of them a glass was needed to see the crystals, while in others they could be distinguished with the naked eye and were from 0·2 to 0·25 inch long. Some of the specimens showed a radial arrangement of the crystals which is not seen in the natural plaster stone. The crystalline structure varies with the distance from the surface in the same ball. It is scarcely noticeable on the surface and the ball must be broken in order to observe it. When broken in halves the crystallisation is more strongly marked near the centre than in the outer parts. At the periphery there is a compact coating or skin about one-thirtieth of an inch thick. Starting from this the mass assumes the character of an irregular assemblage of crystals, more or less coherent, which often fall apart at the least shock.

GLYCEROPHOSPHATES.

IN the analytical notices on p. 226 of THE LANCET of July 23rd it was stated that the glycerophosphates of calcium, iron, and sodium of Messrs. Burroughs, Wellcome, and Co. could be had in tabloid form. As a matter of fact, the preparations sent to us were pure specimens of the salts for prescribing purposes.

A WARNING.

To the Editors of THE LANCET.

SIRS,—On Monday, July 25th, a young man of German appearance was shown into my waiting-room and said that he wished to make an appointment for me to see "Countess Reichenstein" either at my house or at a hotel in Kensington next day. She had been recommended to me by a doctor in Southampton. The appointment was duly made. The same afternoon two pieces of silver were found to be missing from my room. The police are now searching for my friend. He is about 5 feet 7 inches in height, aged about twenty-two years, pale, rather spotty face, clean shaven or very light moustache, slight build, wore a dark short coat, and carried a light grey overcoat on his left arm, and carried two books under the other. He spoke with a strong foreign accent. If any of your readers are visited by this gentleman they are requested to inform the police.

I am, Sirs, yours faithfully,
Buckingham-gate, S.W., July 28th, 1904. H. A. DES VŒUX.

THROMBOSIS AS A SEQUEL OF APPENDICITIS.

A CORRESPONDENT writes:—"Viator" will find the subject referred to in the English edition of Nothnagel's "Diseases of the Intestines and Peritoneum," p. 896, where 400 cases of appendicitis at St. George's Hospital are quoted from. In these 400 cases, which were analysed by Mr. B. N. Tebbs, there were eight examples of thrombosis in the legs. The subject is important from the liability to pulmonary embolism after appendicitis. The thrombosis may be due to extension of inflammation to the right external iliac vein. But it is almost, if not quite, as common on the left side and may then be due to micro-organisms settling in the vein wall, which they have reached by the blood stream, and setting up first phlebitis and then thrombosis. Another bearing of thrombosis after appendicitis is that it may by embolism give rise to pleurisy.

P. C. S.—The number of rejections at the examination in question was not unprecedently large. As far as chemistry is concerned it was considerably less than at the corresponding examination of last year though rather more than at the April examination of 1902.

A. J. A.—We shall be glad to support any such appeal, but how is our correspondent going to make sure that his bark will be followed by a bite?

Permitte vires.—We have no knowledge of the researches in question but we will make inquiries for our correspondent.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 A.M. by Steward's Instruments.)

THE LANCET Office, July 28th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 22	30·06	W.	...	119	75	57	60	62	Cloudy
,, 23	30·01	S.W.	...	126	77	62	61	66	Cloudy
,, 24	29·81	S.W.	...	127	78	64	66	71	Fine
,, 25	29·67	E.	...	108	73	63	65	69	Cloudy
,, 26	29·63	S.W.	1·55	123	73	60	60	63	Cloudy
,, 27	29·73	N.E.	0·03	90	69	60	60	61	Raining
,, 28	30·00	W.	0·01	110	72	60	60	63	Cloudy

During the week marked copies of the following newspapers have been received:—*Sunday Times, Liverpool Journal of Commerce, Oban Times, Ross-shire Journal, Reading Mercury, Times of India, Aberdeen Weekly Free Press, Daily Mail, Westminster Gazette, Burnley Express, Globe, Bradford Observer, Wigan Examiner, Glasgow Herald, Lincoln Herald, Windsor and Eton Express, Derbyshire Courier, Manchester Weekly Chronicle, People's Friend, Darlington Echo, Hull Times, Yorkshire Observer, Manchester Despatch, &c.*

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